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I.—'SUBSTANCE' IN PSYCHOLOGY

BY H. A. C. DOBBS.

THE question of Substance is obviously important for Psychology. By this I mean that the correct analysis of sentences involving terms like "self" and its synonyms is one of the cardinal questions of Psychological analysis. Indeed, the question of the analysis of 'Self-sentences' seems to be as important for the possibility of developing an adequate 'Self-Calculus' as the analysis of 'Thing-sentences' is for the development of a 'Thing-Calculus'. Now in the Natural Sciences we have the raw materials for a 'Thing-Calculus,' and I think most people feel to-day that there would be no difficulty in principle in formulating such a discipline once the technical linguistic requirements had been met—for example, along the lines suggested by Dr. Tarski in his Appendix E to Woodger's *Axiomatic Methods in Biology*. And, again in principle, once such a discipline had been formulated we are fairly confident that the metaphysical problems associated with the ideas of material substances, *i.e.* the sort of puzzles set by questions like "Is a thing just the sum of its sensible appearances?" etc., could be resolved by our being able to see how 'Thing-Sentences' are generated in the Calculus from more elementary sentences. Ideally the elementary sentences would contain nothing but empirical constants, representing direct observational data, together with the appropriate formal or logical constants.

But in Psychology we have a sharp cleavage between the schools which take introspective data as revealing states of the Self as a Substance and those which reject this concept entirely and confine their generalisations to descriptions of behaviour. And there is at present no common ground between the Substantivists

and their opponents which would permit even in principle of the possibility of the construction of a 'Self-Calculus' on lines formally analogous to the suggested 'Thing-Calculus'. The point I am concerned with in this note is to suggest that this is due to the persistence of certain misconceptions about the idea of Substance and the consequent misuse of 'Self-sentences' in psychological analysis. It will be noted that the way I have introduced this matter involves what Carnap has called the expression of 'linguistic' propositions in 'pseudo-factual' language: this is done for the sake of convenience because, as Ayer notes on page 65 of his *Language, Truth and Logic*, such a procedure is "often convenient for the sake of brevity". In what follows, therefore, when I use the 'pseudo-factual' mode of expression keen Positivists must do their own mental gymnastics and produce suitable verbal transformations for themselves: such transformations do exist in all cases.

My main contention will be that the difficulties in the way of Psychology at the moment are largely due to the desire to regard observational data rather as the classical Physicist did when he referred his observational data about impacts, velocities, accelerations, etc., to exactly localised persistent material substances. But whereas the classical Physicist since the time of Descartes has had a fairly clear picture of the structure of his world of material substances, and so has had no difficulty in building up a theory of them endowed with a few general properties interacting according to very general laws, the psychologist has not been in a position to do this. And the reason for this is, I think, quite clearly that given by Broad in his excellent chapter on "Mental Traces and Dispositions" in the *Mind and its Place in Nature*. There he points out, especially on pages 433-436, that it was a characteristic of classical physics after Descartes (as contrasted with mediæval science) "to correlate causal properties with minute spatial or spatio-temporal structure and not to take them as ultimate facts". Broad goes on to point out on page 440 that the difficulty for Psychology is ultimately that of conceiving satisfactorily the sort of structure which Mental Substances would have to possess if a theory based on them was to be as successful as the classical Physics was in explaining observational data. His words are worth quoting in full:

"We must remember that before Descartes' time there was a faculty-physics and that Descartes' greatest achievement was to show that the various causal characteristics of physical things can be connected with each other by correlating them all with characteristic forms of spatio-temporal structure and

and a few very general and pervasive causal characteristics. No one has succeeded in connecting the various mental 'powers' in any analogous way, and that is why Psychology at present hardly deserves the name of a science. It is I think quite certain that Psychology will remain in this unsatisfactory state unless and until someone succeeds in doing for it what Galileo, Descartes and Newton did for Physics. And the difficulty of doing anything of the kind is obvious when we remember how difficult it is to conceive of purely mental structure or to imagine what can be the few fundamental causal characteristics which together with differences of 'mental structure' will explain and connect the various mental powers."

In contrast to this, classical Physics found that the more completely it succeeded in building up a model of the Physical World as composed of a system of particles situated in a neutral public space of three dimensions and persisting in a public unidimensional time, the more successful it was in predicting the succession of directly observable data. This process found its logical completion in the tendency to regard the physical world as composed ultimately of a very complex system of mass-points, endowed with certain properties, such as charge, elasticity, etc., each of which persisted through time and interacted with others in accordance with general laws. This world of point-particles was conceived as being theoretically specifiable by the simultaneous assignment of exact values to a set of variables in mathematical functions which embodied the laws of particle behaviour with complete determinacy. It was, of course, conceded that it was in practice impossible to measure any of these variables with perfect exactness owing to the inaccuracy from which all actual instruments suffered in a greater or less degree. But this was regarded as a limitation contingent upon the observer's power of getting to know the actual states of the point-particles, which was to be off-set by taking a series of observations and choosing some value representative of the central tendency of the set as the " true value " of the variable measured. Thus, although the imperfections inherent in the actual process of measurement made it causally impossible ever to observe the " true values " of any variable directly, this fact was not supposed to cast any doubt upon the validity of the notion of a world of point-particles characterised by exact values of continuous variables.

This conception eventually came to grief when it was found to be no longer possible to predict the observational data of sub-atomic Physics in terms of a model of point-particles defined by the simultaneous assignment of a set of exact

values in the functions expressing the general causal laws of the Physical World. Heisenberg introduced a new conception by suggesting that the point-particle model should be dropped, and that we should be content to build up a purely mathematical description of phenomena, by incorporating only observational data, when these had been treated in such a way as to make them amenable to the required numerical manipulations. Thus in place of the classical dynamical variables—the canonically conjugate co-ordinates and momenta which were supposed to characterise the mechanical system with complete determinacy—Heisenberg introduced a very complicated system of schedules of quantities derived from observation arranged in a particular way so as to form what the mathematician calls a matrix. The replacement of the ordinary dynamical variables, which in classical theory had a continuous range, by matrices had a very important consequence. For the matrix elements were so arranged that the product of two matrices was not in general commutative; and it was a consequence of Heisenberg's theory that it would never be possible to specify any given state of any system with the complete determinacy required by the classical picture. Thus the classical notion of point-particles had to be given up, and the physicist was left instead with sets of observational data which could be related to each other by certain mathematical expressions entailing discontinuous transitions between one observational state and another.

This state of affairs caused for a time widespread intellectual confusion. The physicist had grown accustomed to assuming a substantival background, to which he could relate his successive observations in such a way as to smooth out their admitted observational discontinuities in a continuous space-time frame in which the substances (of which his data were particular manifestations) had their being and followed out their motions. It was widely believed that either we must give up the notion of persistent things, or we must give up the notion of a continuous fourfold space-time in which those things had their being.

Later, a way out of this confusion was found by a reinterpretation of the significance of the word "state" as applied to Dynamical Systems, and the introduction of the notion of "superposition" as applied to "states" in this sense. Thus we find Dirac, in his book, *Quantum Mechanics* (second edition), using the words "state", "superposition", "photon" in such a way that a "photon" can be simultaneously in several "states" at "the same time". (This would apply to any "particle" whose dynamical specification could be given in terms of the

newly defined "quantum states" and "quantum superposition process".) Moreover Dirac showed that it was possible on this basis to develop a theory which would permit of alternative ways of describing one and the same set of dynamical facts, the first entirely in terms of variables with a discrete range, and the second in terms of variables with a continuous range. He developed transformations between the two which provided theoretically a bridge between the discrete set of values, furnished observationally, and the continuous variables used in the functional analysis of the mathematical physicist. On this basis, too, he was able to show that there was no fundamental opposition between the wave and particle pictures of the substratum to which observational phenomena were referred and of which they were taken to be particular manifestations. The former was suitable in one set of conditions and the latter in other conditions; and the one was transformable quite naturally into the other by Second Quantisation methods.

These views had profound significance for the physicist's concept of substance. For instead of being regarded as a genuine something—although nobody knew just what—it became rather a logical construction out of the observed data which would previously have been said to be manifestations of it. One mode of construction led to a particle-picture; another to a wave-picture; and it was a question of which mode was appropriate to the problem under consideration.

But there was, I think, a defect in Dirac's formulation which had the curious result of producing a position in which transformations could and did exist (between discrete and continuous sets) of such a kind that a continuum became equivalent to an enumerable set with an infinitely dense aggregation of elements. Dirac's statements are somewhat obscure, but it is, I think, quite clear from the footnote on page 82, and the discussion in § 36, and from his use of the 's' weight functions (to pass from expressions involving sums to those involving integrals), that he was employing the idea of a merely compact enumerable point-set as equivalent, under certain conditions, to a continuous non-denumerable point-set. I have set out my reasons for thinking this, and offered certain general criticism of this procedure, in an article appearing in *Phil. Mag.*, Vol. 34, nos. 237 and 238. My view may be said, quite shortly, to be that the relations which Dirac establishes between his Discrete and Continuous Representations are not Transformations in the ordinary sense which would imply a relation between two *isomorphic* co-ordinate systems. They are rather of the nature of Interpolation relations whereby we can pass from a system specified by a set of dynamical

variables having only a discrete range to another system specified by variables with a continuous range. This process is to be conceived on the analogy of deriving a smooth curve from a set of discontinuous points obtained from observational data. Now the consequence of this change is to put the two systems on a different logical level. The discrete system is to be regarded as being a system for expressing *directly* the observational data. If we choose we can regard these data as being discontinuous manifestations of an underlying substratum, and by means of the appropriate constructions we can formulate a system of continuous variables for the description of states in this supposititious substratum. By postulating the requisite laws, described now by continuous functions and their differential coefficients, we can work out the behaviour of this substratum and deduce the way in which its character will change with time, *i.e.* we can deduce its motions in a space-time continuum. Finally, by an inverse process, we can deduce the probabilities of certain future discrete configurations of data and test our deductions by observation and experiment. In this sort of way we can see how we may start from expressions involving observational data, and the appropriate logical constants, and go on to expressions of a different logical level, involving a continuum, by a process of Interpolation, and finally reach other expressions involving only observational data and logical constants by an inverse process. Any question about the metaphysical status of Things or Physical Substances can then be answered by seeing that the question relates to the Interpolated System, or else is nonsensical through involving an attempt to construct an expression which brings in symbols appropriate to the Observational System and symbols appropriate to the Interpolated System in such a way as to treat them as if they were on the same logical level.

Now what is the relevance of this to the Psychological "problem of Substance"? First of all I think it offers a possible solution to the old problem of the Substantivists versus Phenomenalists in regard to the analysis of the Self. It may be that all "Self-sentences" are of a different logical level from "introspection and observation-data sentences" and that the puzzle about the "Self"—whether it is a Substance, or merely a way of relating certain sets of occurrent states—only arises when there is an attempt to construct sentences in which introspection-data terms and self-terms function in a same-level way. But there is more to it than this: we have, it seems to me, reached a position in regard to the problems of Psychology, and the possibility of its future

progress, curiously like the position of Physics in Descartes' day. A considerable mass of empirical observational data relating to human minds, both on the cognitive and the conative sides, has been collected. But the data cannot be organised and collated as effectively as they should be in the absence of any coherent and generally accepted theory of the Self. This, in turn, is due to the absence of any consensus of opinion on psychical *structure*. Thus, from one standpoint the essential *unity* of the self is emphasised, and from another the fact of a *multiplicity* of elements, dispositions, drives, is stressed. And the problem is in no way assisted by saying that this diversity and multiplicity finds its resolution or unification in the unity of a Self or Pure Ego, because nobody has yet agreed on what the nature of that unity is.

I suggest that the ambivalent attitude towards the Self just mentioned, and the lack of clear statement of just what the structure of the Self is, can perhaps be reduced or clarified if we try and learn from the approach adopted by the New Quantum Theorists. That is to say, we must reverse the traditional approach, which started off by postulating a substantial unity for the Self, and then regarded the particular occurrences, found in introspection and overt behaviour, as the manifestations of this Unity and its various Powers, Faculties, or Dispositions. We should instead try to treat these Dispositions (both psychical and behaviourist) as being probability links between occurrent states, just as Quantum Theory can treat the "Physical Thing and its Properties" as a system of Interpolations linking observational sentences by probability relations. Thus we must start, as Heisenberg started, from the strictly observational data. These data will include results of Intelligence Tests and other experimental techniques designed to measure instinctive drives. That these data are amenable to treatment from this angle is, I think, quite clear from Burt's very interesting articles on "Instincts and their Place in Modern Psychological Theory" in *The British Journal of Educational Psychology*. Thus, in Vol. XIII, page 13, he says: "Human beings like other animals inherit certain innate tendencies which influence their everyday behaviour, at any rate during the earlier years of life. Four such tendencies (or groups of tendencies) are almost universally recognised: feeding, fighting, fear and sex: there may be many others less easy to establish.

On the conative side these innate tendencies are analogous to the 'abilities' which have replaced the old-fashioned faculties on the cognitive. These are not to be thought of as well defined

and separate entities which can be counted once for all and catalogued in a definitive list but rather as analogous to the so-called Group factors."

Burt argues, indeed, that there must be no hypostasis of these tendencies into entities, but that we should rather conceive them as indicating statistical predictabilities. And he says . . . "The plain man and the popular expositor like to visualise these abstract statistical predictabilities in the shape of material causes. . . . Nor are such speculations entirely unreasonable from a theoretical standpoint: they supply the *a priori* probabilities which it is the business of experiment and statistics empirically to confirm. But from a practical standpoint, however, they raise extraneous issues which require evidence not at present in our possession."

This passage seems to me important for two reasons: (1) because it indicates a belief on the part of practising experimental psychologists that we can extrude the baneful effects of reifying tendencies by substituting the idea of their being no more than a way of scheduling statistical predictabilities relating to directly observable data. This seems to me a very important first step in the direction of applying the lessons of the New Quantum analogy. (2) The quotation makes it clear that in order to apply such a treatment we must have some initial conception of *the structure of the system* in regard to which we are going to make our predictions. In Quantum Theory this structure is ultimately a postulated distribution of states in space-time: the trouble is to construct something able to do the same work for psychological data. As Burt points out, the plain man does it by identifying (or failing to distinguish between) the Mind or Self and the Brain or Body. Indeed, this would also seem to be true of the strict Behaviourist. This procedure does indeed provide the indispensable structure in the shape of a system of material objects in a space-time framework. But it has many difficulties amongst which we may mention the very obvious one that it confuses different types of expressions—those containing 'material-thing terms' and those containing 'introspection-data and self terms'—in a very serious way. While it may be true that there is *some* connexion, in virtue of which the assertion of any 'introspection-data' sentence materially implies some 'material thing' sentence, it would seem quite plain that this connexion is certainly not one of entailment or analytic equivalence.

There is, it seems to me, only one way to endow the Mind and Self with a structure of the requisite sort, *i.e.* to provide a system

in which it will be possible to relate 'introspection-data sentences' in a way analogous to the way in which the space-time manifold of the Quantum Physicist relates his 'observation-data' sentences. This will be by constructing an extensive Manifold, ordered, not by the relation which generates the space-time of the Physicist, *viz.* Vectorial Displacement, but by a psychical counterpart of this. For this purpose it seems to me that the notion of 'change of point of view' might do, if we define it as Price has done in his book, *Perception*, especially pages 254-255. For there he shows that it is possible to define "neutral point of view" entirely in terms of groups of sense-data. He says on page 255: "We have now defined 'point of view' and 'change of point of view' entirely in terms of visual sense-data without any mention of kinæsthetic or other somatic data; we have not even mentioned visual sense-data belonging to the observer's own body. . . . What is more surprising, it follows that a visual percipient without any body at all could have a point of view and change it just as we can. And does not that mean that he could move? For to be at a point of view is to have a position, and change of position is surely motion." I think that Price's concepts of "neutral point of view" and "change of point of view" are all that is required to generate a psychical continuum of the necessary kind for locating psychical tendencies and their motions. The publicity of this continuum would be secured by the fact that the "standard solids" of sense-data, which are used to define "neutral point of view", are located in Physical Space. Thus we should be able in principle to pass from "neutral point of view" sentences to "public physical space" sentences by the appropriate constructions. We could then define an initial frame of reference and map out the psychical continuum by means of the relation of "change in point of view" which would be involved in reaching any point in the continuum from the origin.

The question would still remain, however, of relating the "introspection-data expressions" to the "self-expressions" and the "tendency-expressions". Here again I would suggest approaching the matter from the Quantum Analogue angle and boldly taking the line that the latter were Interpolatory expressions. This would mean that the Self and its tendencies would be a statistical probability concept. We should never directly "observe the self" or its tendencies. We should observe or introspect data which would be 'located' by giving them co-ordinate positions defined by displacement from a standard reference "point of view." These data would exemplify values of variables

belonging to a discrete representation. By suitable Interpolatory methods we could then construct Continuous Representation Systems, having relations to the Discrete Observational Systems analogous to the relations holding between Discrete and Continuous Representations in Dirac's *Quantum Mechanics* (when these are interpreted as I have suggested).

An important result would be that we should have the same sort of interpretative ambivalence in our psychological representation systems as Quantum Theory has. That is to say, we should find it appropriate to adopt a Particle Analogue for the Self for some purposes and in some contexts, and a Wave in Multiple Packet Analogue for others. Quantum Theory adopts the Particle picture where it is handling Interaction problems involving observables in the sort of way that we should describe by saying that the behaviour of individual systems was important. It adopts a 'Wave Packet Picture' in situations involving a large aggregation of similar systems where the observables studied relate to the behaviour of the systems *en masse*. Similarly, we should expect our new Interpolatory Psychology to adopt a 'Particle-Picture' of the Self when dealing with situations involving individual instances of what are often called its "acts", and here traditional Psychology has always stressed the essential "unity of consciousness". But in dealing with aggregations of data, in none of which was the 'integrative act aspect' the important feature, we should expect a "Multiple Packet" picture to be adopted. And this, too, would fit in with modern Factor Theory interpretations of Intelligence Test data.

The view of the Self as a certain sort of structure which could be given either a "particle-picture" or a "Multiple-Packet Picture" interpretation according to circumstances, would be equivalent syntactically to the assertion that interpolatory expressions could be constructed in two ways from the observational data system of expressions; and these different modes of expression could be reconciled just as the equations for the wave and particle pictures can be made equivalent in a continuous representation system by the method of Second Quantisation described by Dirac on page 235 of his book *Quantum Mechanics*. I believe that the adoption of such a view might have very great advantages for Psychology, both in regard to ordering its 'normal data', and also in the abnormal field of Multiple Personality, and even in the paranormal field of psi-phenomena. What seems to me to be required as a practical first step is for a group consisting of an experimental psychologist, a Quantum Theorist, a statistician, and perhaps a mathematical logician, to get together to discuss the practicability

of working out a theory of psychical structure along these lines.

Of course we find writers on Psychology making use of geometrical structures such as N-dimensional manifolds for representing Test scores by vectorial displacements. But it seems hardly necessary to point out that these methods are essentially highly artificial statistical procedures useful only for formulating results so as to bring out salient features vividly. These geometrical structures are admittedly only formal models which would stand in the same sort of relation to the psychical continuum, which I am suggesting could be constructed by means of the relation "change of point of view", as the multifold conceptual Phase Space of Statistical Mechanics stands to the Relativist's objective four-fold Space-Time Continuum. What Psychology urgently wants is a manifold analogous to the latter, but constructed by means of a *psychical structural relation*, and not by a physical one (such as Vectorial Displacement) from which the Relativist's Continuum is derived.

II.—STUDIES ON THE STRUCTURE OF THE MIND

By Caleb Gattegno.

Introduction.

It has been an ancient desire to know if our mind is connected with a specific structure. The famous theory of brain localizations is a proof of that desire.

In 1923, Freud published his *The Ego and the Id*, in which he tries to study the structure of the mind, not in connection with the body, but in itself.

This paper of Freud's is said to be obscure. It is obvious that it is a very daring attempt to describe a geometrical structure using clinical words. Nevertheless, this attempt is interesting for two reasons :

(1) it initiates a research into the structure of the psychic which uses only psychological notions—the ego and the id, the super-ego and instincts,

(2) it shows clearly the contradictions we shall meet on our way if we aim at a description of the adult *per se*.

Starting from Freud's study, I was able to arrive at a completely different position with regard to the structure of the mind, and the facts can be summarized in the following way :

1. If one wants to study a structure, one has to define the elements on which one works. One can take as primary element the *human experience*. By this is meant any emotion, any sensation, etc., at any moment of one's life.

2. Once the elements are taken, the relation between them must be found. (What makes two human experiences come in contact ?) This means that, besides the elements of the set considered, one must define an " agent of accumulation " of these elements and see if there is a law of accumulation. This agent we call the *ego* of the individual.

3. It is always by a mere abstraction that we consider an individual. Since the beginning of his life an individual belongs to a group, and we have to put him into this natural collective environment, which gives him as much as he gets by himself. But the human environment is the result of human life in common,

a sort of common denominator of a set of individuals. It is there that I find again the *id* and the *super-ego* of Freud.

4. A psychological research need not necessarily try to reduce psychological facts to undefined elements which seem *a priori* simpler than the real facts. There is no contradiction in starting with a very comprehensive fact which throws light on the whole. I consider the set of *all* the experiences of a given individual up to a certain moment and call it his *field of cognition* (F.C.), and see how the ego builds it. This method has the advantage of showing

(*a*) a uniform method of increasing the F.C.

(*b*) the relation between an individual and his group.

5. The real study of this theory is a mathematical one. I have already made it, using Prof. Frechet's Theory of Abstract Spaces, and it has been published.[1] The consequences of this analysis are of a certain importance in many fields.

The present paper is divided into three sections. In the first I give quotations from Freud's paper and Marcault-Brosse's book [2] to show the interest of the problem. In the second section my views are developed, the last section being devoted to some applications.

I. From Freud's Paper and Marcault-Brosse's Book.

Quotations from Freud's paper are from the authorized English translation by Joan Rivière in the International Psycho-Analytical Library, edited by Ernest Jones, No. 12 (1942). If they are lengthy, it is principally to show the interest of Freud's views for our problem, his treatment of it, and the germ of the new idea.

1. . . . " We obtain our concept of the unconscious, therefore, from the theory of repression. The repressed serves us as a prototype of the unconscious. We see, however, that we have *two kinds* of unconscious—that which is latent but capable of becoming conscious, and that which is repressed and not capable of becoming conscious in the ordinary way " (p. 12).

. . . " At the same time we have become more or less accustomed to these two meanings of the term unconscious and have managed pretty well with them " (p. 13).

. . . " In the further course of psycho-analytic work, however, even these distinctions have proved to be inadequate and, for

[1] C. Gattegno, " Analyse Générale et Topologie de l'Espace des Connaissances ", *Bulletin de l'Institut d'Égypte* (1945).

[2] Marcault et Brosse, *L'Éducation de demain*, Alcan, Paris, 1939.

practical purposes, insufficient. . . . We have formulated the idea that *in* every individual there is a coherent organization of mental processes, which we call his *ego*. This ego includes consciousness, and it controls the approaches to motility . . . it is this institution in the mind which regulates all its own constituent processes . . . " (pp. 15-16).

. . . " We have come upon something in the ego itself which is also unconscious, which behaves exactly like the repressed, that is, which produces powerful effects without itself being conscious and which requires special work before it can be conscious . . ." (pp. 17-18).

. . . " From the point of view of analytic practice, the consequence of this piece of observation (the two kinds of unconsciousness) is that we land in endless confusion and difficulty if we cling to our former way of expressing ourselves and try, for instance, to derive neuroses from a conflict between the conscious and the unconscious " (pp. 16-17).

. . . " For our conception of the unconscious, however, the consequences of our new observation are even more important. Dynamic considerations caused us to make our first correction : *our knowledge of the structure of the mind* leads to the second. We recognize that the Ucs does *not coincide with what is repressed:* it is still true that all that is repressed is Ucs, but not the whole Ucs is repressed. A part of the ego . . . may be Ucs, undoubtedly is Ucs. And this Ucs belonging to the ego is not latent like the Preconscious ; for if it were it could not be activated without becoming Cs, and the process of making it conscious would not encounter such great difficulties. When we find ourselves thus confronted by the necessity of postulating a third Ucs which is not repressed, we must admit that *the property of being unconscious begins to lose significance for us* . . ." (pp. 17-18).

2. These quotations are very interesting, for they show :

(i) that Freud discovered, very late, that there is unrepressed Ucs.

(ii) that the Ucs is not well defined, for it is first what is repressed, and then it may be something which is not repressed. We do not really know if repression or Ucs is first assumed.

(iii) they definitely divide the mind into three sets, not well defined, it is true : the Cs, the Prs and the Ucs, the last being still under analysis.

3. At this point we must quote Marcault and Brosse's theory. I do not translate, in order not to alter the original meaning :

. . . " Unité biologique, puisqu'il accomplit la fonction vivante d'intégration et de maîtrise pour ses fins propres, le moi est également unité consciente. Il *est* la conscience individuelle. C'est lui qui possède la mémoire, c'est lui qui, grossi à chaque instant de toutes les expériences détaillées que la vie lui apporte, les synthétise continuellement en expérience consciente, en faculté d'action. C'est lui qui est l'humain dans l'homme. Sans doute il n'est jamais rien d'arrêté ni de fixe ; il est plutôt quelqu'un que quelque chose ; il est fonction plutôt qu'organe, énergie plutôt qu'objet mu. Mais cette énergie est consciente. Elle n'est pas l'énergie physique qui organise les corpuscles d'électricité en atomes et en molécules, ni l'énergie vitale qui organise les atomes en cellules et en tissus vivants, ni l'énergie psychique qui organise les cellules en instruments de perception et d'action ; elle est énergie spirituelle ; elle organise la perception en connaissance et en puissance " (p. 189).

This quotation is fundamental, for it shows that instead of a doublet Cs-Ucs, the *ego* as a spiritual energy is introduced. In the following lines the authors continue their analysis of our question :

. . . " Mais il est une autre expression fonctionnelle de l'activité biologique du moi, liée nécessairement à la structure . . . c'est la dualité : conscient-inconscient, considérée trop souvent comme une réalité *sui generis*, comme la juxtaposition de deux champs d'activité psychique séparés ; cette dualité est l'une des manifestations de l'activité fonctionnelle du moi et porte la marque de sa relativité évolutive " (p. 196).

. . . " La conscience, soit pendant la période particulière où elle établit sa maîtrise, soit lorsqu'elle utilise par la suite la maîtrise ainsi obtenue, s'y fixe et concentre son énergie sur la fonction spéciale qu'elle met en jeu . . . la relation entre le conscient et l'inconscient à un niveau particulier dépend donc du degré de concentration de l'intérêt du moi. *Plus grande la concentration, plus complète l'inhibition pour nous du contenu de l'inconscient ;* plus faible la concentration, ou plus grande la diffusion, et moins complète est pour nous l'inhibition des activités du niveau occupé " (p. 197).

And like Freud :

. . . " En profondeur donc comme en largeur, la relation entre le conscient et l'inconscient est mouvante ", but, " et c'est ce facteur énergétique : la concentration de la conscience du moi, qui la détermine."

4. We have met the expression " the *ego* " used in two quite different senses—which does not help the psychologist. Freud's

definition we must say is not clear; the second one contains a complication which comes from the expression " conscience du moi ". It is necessary therefore to throw some light on the question.

5. To be able to work further I have to quote again from Freud's paper:

. . . " We have said that consciousness is the *superficies* of the mental apparatus " . . . (pp. 19-20).

. . . " I have elsewhere already suggested that the real difference between a Ucs and a Pcs idea (thought) consists in this: that the former is worked out upon some sort of material which remains unrecognised, whereas the latter (the Pcs) has in addition been brought into connection with verbal images. *This is the first attempt to find a distinguishing mark for the two systems, the Pcs, and the Ucs, other than their relation to Cs* " . . . (p. 21).

" It dawns upon us like a new discovery that only something which has once been a Conscious perception can become unconscious, and that anything arising from within (apart from feelings) that seeks to become conscious must try to transform itself into external perceptions: this can be done by way of memory-traces " (p. 21).

The first quotation is a geometrical remark which in reality does not give any precision to what Cs is, since the mental apparatus is not located in a space; and even so we do not understand if it is the whole surface of this undefined apparatus that is conscious.

The second one, in which I have italicised some words, shows a new problem in the question: how to study the Ucs mind without using the conscious. It is quite a new position in the study and demands new methods; and Freud will find them when he defines the *id*.

6. Other geometrical remarks are:

. . . " The question how something that is repressed can be made (pre) conscious would be answered as follows. It is done by supplying through the work of the analysis Preconscious connecting-links of the mind we have been discussing. Consciousness remains where it is, therefore, but, on the other hand, the Ucs does not rise up into the Cs " (pp. 23-24). " After having thus cleared the relations between external and internal perception and the superficial system Pcpt-Cs, we can go on working out our conception of the ego. *It clearly starts out from its nucleus, the system Pcpt, and begins by embracing the Pcs, which is adjacent to the memory-residues.* But the ego, as we have learnt, is also unconscious " (p. 27).

The picture of the structure of the mind begins to be more detailed, but for the moment we do not know in what space we have to think of it.

7. . . . " I propose to take it into account by calling the entity which starts out from the system Pcpt and begins by being Pcs the *ego*, and by following Groddeck in giving to the other part of the mind, into which this entity extends and which behaves as though it were Ucs, the name of *Id* " (pp. 27-28).

. . . " We shall now look upon the mind of an individual as an unknown and unconscious *id*, upon whose surface rests the *ego*, developed from its nucleus the Pcpt-system. If we make an effort to conceive this pictorially, we may add that the ego does not envelop the whole of the *id*, but only does so to the extent to which the system Pcpt forms its surface, more or less as the germinal layer rests upon the ovum. The ego is not sharply separated from the *id* ; its lower portion merges into it " (p. 28).

Here, no doubt, Freud is looking for a representation of the mind, and he even draws diagrams which have the double defect of being, (1) in two dimensions, (2) built with the ordinary geometrical ideas. These defects disappear if one uses, as I did in the quoted paper, abstract spaces.

8. As to the relations between the ego and the id, we have :

. . . " It is easy to see that the ego is that part of the id which has been modified by the direct influence of the external world acting through the Pcpt-Cs ; in a sense, it is an extension of the surface-differentiation. Moreover, the ego has the task of bringing the influence of the external world to bear upon the id and its tendencies, and endeavours to substitute the reality-principle for the pleasure-principle which reigns supreme in the Id " (pp. 29-30). . . . " The ego is first and foremost a body-ego ; it is not merely a surface entity, but it is itself the projection of a surface " (p. 30).

At this point we see that (i) the introduction of an id is of great help to the ego, which by itself was unable to build the total mental apparatus ; (ii) that the id is very wide and contains everything which cannot be analysed ; a kind of store where all psychological elements, here Ucs, will find place and from which we, and the ego too, shall be able to take them out ; (iii) that Freud's method does not consist in a development of an idea, but in an investigation creating one hypothesis after another to fit with the facts. Freud's perspective of life has started from nothing but from slow knowledge got in his clinic. For practical purposes he developed his ideas slowly, and we see in this work, *The ego and the id*, a first systematic desire to study the complete mind.

9. Without speaking of an id, here is the view in Marcault and Brosse's book: . . . " la dualité conscient-inconscient possède pour chacun des limites générales, variables aussi d'un homme à l'autre. Ces limites sont fonctions de la portion des niveaux psycho-physiologiques maîtrisée au cours de la jeunesse. Nous n'occupons pas consciemment tout notre organisme; certaines fonctions n'entrent jamais dans le champ de conscience d'un moi particulier. En largeur pour chaque niveau, en profondeur pour l'ensemble des niveaux, chaque individu obtient une maîtrise variable des fonctions qui lui appartiennent. . . . Le jeune homme arrive donc à l'âge adulte avec un ' conscient ' et un ' inconscient ' qui lui sont propres. D'autre part, il faut distinguer la zone inconsciente des niveaux partiellement intégrés par le moi, de celle demeurée ' subjective ' . . . " (p. 198).

In this page, full of very deep and sound ideas, we must say that the words " inconscient " and " conscient " have lost the meaning used before. An important element in the Marcault-Brosse conception of the mind is the " niveau " We shall see that one can do without this, although one must agree that the series of psychological events in life occur as if levels could be determined.

10. If we want to give to our own theory its full relief, we have to quote Freud again and follow him in his construction of the human mind. . . . " If the ego were merely the part of the id that is modified by the influence of the perceptual system, the representative in the mind of the real external world, we should have a simple state of things to deal with. But there is a further complication.

The considerations that led us to assume the existence of a differentiating grade within the ego, which may be called the ego-ideal or super-ego have been set forth elsewhere. They still hold strong. The new proposition which must now be gone into is that this part of the ego is less closely connected with consciousness than the rest " (pp. 34-35).

. . . " Whereas the ego is essentially the representative of the external world, of reality, the super-ego stands in contrast to it as the representative of the internal world, the id " (p. 48).

. . . " Owing to the way in which it is formed, the ego-ideal has a great many points of contact with the phylogenetic endowment of each individual—his archaic heritage. . . . It would be vain, however, to attempt to localize the ego-ideal, even in the sense in which we have localized the ego, or to work it into any of those analogies with the help of which we have tried to picture the relation between the ego and the id " (pp. 48-49).

I have underlined this sentence, for it seems that in my treatment this localization is possible. I do not see why a method, if correct, will work in one case and not in the other. The only thing to do is to find a correct method. We see that Freud himself saw the inadequacy of his two-dimensional diagrams.

11. Marcault and Brosse, on the same question, have the following view :

. . . " Nous sommes ici en face des faits qui ont contraint certains spécialistes des rapports du conscient avec l'inconscient à discriminer entre l'inconscient proprement dit et ce qu'ils nomment le ' super-conscient '. Notre analyse indique une solution de ce problème. . . . Les niveaux objectifs sont en rapport avec l'hérédité psychologique et culturelle reçue par l'individu, les niveaux subjectifs en rapport avec la variation individuelle, et l'inspiration qui, du milieu social, le stimule à l'activité. Les premiers sont parfaitement conscients et inconscients, les seconds totalement immanents ou supraconscients " (pp. 198-199).

Freud, who was always criticizing his own thoughts, came to a very similar position when he said :

. . . " Moreover, one must not take the difference between ego and id in too hard-and-fast a sense, nor forget that the ego is a part of the id which has been specially modified. The experiences undergone by the ego seem at first to be lost to posterity ; but, when they have been repeated often enough and with sufficient intensity in the successive individuals of many generations, they transform themselves, so to say, into experience of the id, the impress of which is preserved by inheritance. Thus in the id, which is capable of being inherited, are stored up vestiges of the existences led by countless former egos ; and when the ego forms its super-ego out of the id, it may perhaps only be reviving images of egos that have passed away and be securing them a resurrection " (p. 52).

12. This last quotation is for us very important. It shows us, after the discovery of our theory, how far Freud could go without the proper tool for dealing with the problem—this modern chapter of mathematics : Abstract Spaces. It shows also that the id has changed its face since it was introduced. It has become a group-notion, while in the beginning it was a property of an individual mind. And in the following final quotation from Freud, we find another of the fundamental contributions of his genius to general psychology.

. . . " It appears, however, that by including in our calculations this other mechanism by means of which love can be changed into hate, we have tacitly made another assumption, which

deserves to be formulated explicitly. We have reckoned as though there existed in the mind—whether in the ego or in the id—a displaceable energy, which is in itself neutral, but is able to join forces either with an erotic or with a destructive impulse, differing qualitatively as they do, and augment its total cathexis. Without assuming the existence of a displaceable energy of this kind we can make no headway. The only question is where it comes from, what it belongs to, and what it signifies!" (pp. 61-62).

13. I have purposely withheld any consideration of Freud's own conception of the psychological life. I wanted to show that my problem of the structure of the mind is connected with Freud's and can be considered as an investigation using orthodox principles, however revolutionary its real foundations may be.

II. The Field of Cognition.

According to the last quotation from Freud and the first from Marcault and Brosse, we may talk of an energy at the disposal of the mind, a spiritual energy.

I shall take leave to consider this energy as given with every individual and shall call this power of experiencing the *ego* of the individual in question.

This ego exists as soon as the two gametes of the parents fuse to become the egg. It is the internal force issuing from two living cells, and will have the heritage of these two cells not as a mere addition but as an original product which we shall leave for the moment completely aside. This ego is present all the time that the fœtus is developing and its action is to master, through the nervous system, the anatomical structure as soon as it is specialized. The nervous system itself follows a definite evolution. This system must not be considered as more than a modelling power of the tissues to submit them to the ego. At every step it is sufficiently developed for this task. When there are only a few cells in the fœtus, there is no need for a developed nervous system.

We leave out in this paper the whole of this question. But according to our starting point we must consider the organizing agent as present from the beginning of life and not added to the body when the child is born. The ego moulds the body and possesses each cell through the nervous system—more precisely, through that part of the nervous system which is present at the considered moment.

So when the child comes into the world his ego has gone through all the work of mastering the tissues, and in its early

life it learns all the fundamental vegetative functions such as breathing, eating, evacuating. This intense work is done by an active ego even if supported by what is usually called an instinct. If you watch a new-born child trying to suck its mother's breast, you will notice that it is a real work with several failures. We cannot say that this is instinct, for instinct should be blind, and should work automatically and perfectly.

This ego has therefore experienced some parts of the world and, after the body, it will investigate the environment.

Let us give the name *Field of Cognition* (F.C.) to the *set* of all the experiences an individual has had at the moment we consider it. The F.C. is the amount of knowledge he has accumulated. He can, for example, take the blood from the heart to the cells, eat and walk, perhaps talk and play music, love, etc. Not a single element of the F.C. has been given without the ego noticing it or grasping it. The child learns everything, and it learns always in the same way, using the previous tools accumulated to arrive at a further knowledge, which once integrated may become a tool.

Now the F.C. is the figure of the individual. As a function of the time it is its history, and if we want to know it we have to make a double research :

(I) What is the structure of the F.C.

(II) What are the relations between two or more F.Cs.

1. We assume :

(1) the existence of an *ego ;*

(2) this ego's capability of experiencing ;

and we shall call the main property of the ego *concentration*.

2. We define :

(i) An element of F.C. is said to be *envisaged* if it is the focus of the concentration of the ego. For example, if I think of my daughter's face. The element, my daughter's face, is an element of my F.C., but I need not always concentrate on it. If I concentrate on it, I say that I envisage it.

(ii) If I concentrate on any element of my F.C. I always feel this element surrounded by others which are not as clear at that moment as the first one. So we shall call every set of elements of my F.C. which appear to me with this element its *neighbourhood*. It is obvious that every element of a F.C. has at least one neighbourhood.

These definitions were sufficient to deduce some mathematical properties of the F.C., but here we shall only underline the psychological meaning.

3. For an ego which concentrates on an element, say A, of his F.C., the only elements which at that moment are attained are in the neighbourhood of A. We shall give the name *consciousness* to this set of elements. It is obviously a function of the time. We shall symbolize it by N_A^t, which means : neighbourhood of A at the time t.

4. Everything in the F.C. except A and its neighbourhood is *unconscious*. But obviously, many of my experiences are not liable to be envisaged now. For example, to-day I do not remember the tenth step of my life, though I took it at that time with the greatest concentration. So we have to divide the unconscious into two sets. The set of all elements of my F.C. that I can envisage at the moment t, I will call the *Preconscious* P_A^t, and the set which remains after subtraction of N and P the *unconscious*. (There will be no ambiguity from now on.)

The ego can move in its F.C. like a torch over an object and light up some elements : they will become conscious. All the possible conscious elements in a certain interval of time are in P, all the others are unconscious.

5. Our definitions are quite different from Freud's. Our ego is not a set like Freud's. Our unconscious is not made of the repressed elements but of all the elements which for any reason are not liable to be envisaged.

If we consider any F.C. built as we assumed by a continuous series of experiences, we find in the unconscious all the automatisms whether they be physiological or psychological. The preconscious contains the *mobile knowledge*, that set of elements to which we can go immediately and make use of on the spot.

The three sets now defined are functions of the time, and we cannot think of them without this fundamental variable. By definition, all that is now Ucs has been Cs, there is not a single element of F.C. which has not been once envisaged. So if we consider the history of an F.C. we see that as it develops the Ucs starts from nothing and increases all the time. Into it go all the experiences which have served to constitute tools of knowledge; these tools have been for a time either Cs or Pcs ; Cs when created and used, Pcs when still not perfectly mastered.

6. This view does not leave room for a repressed element. To be able to deal with these we have to wait for a new development of the theory.

7. So the ego, which is an individual's power of experiencing, has to go through a whole series of experiences which will allow it to build a F.C. such that this individual will be one day an adult of a definite group.

But at every moment the figure is complete in itself. It is like an increasing length. It is a length at any moment, not only when it gets its final magnitude. Every individual will keep in his F.C. all his experiences and will recognise himself at every moment of his history as a unity, a variable unity it is true, but nevertheless a unity.

8. It is the architecture of the F.C. which defines the personality. But in it there are two types of elements : those which resemble those of other F.Cs and those which are completely original.

Let us consider the biological elements, anatomical and physiological : we can say they are common to all individuals. We all need water, sleep, etc., to live. Moreover, we all have the same reactions to some definite excitations. These psychic elements are also common.

Without prejudice we might assume that in any set of F.Cs we can find common elements : for we have first the biological, then some psychic and sometimes some psycho-sociological : for instance, the vocabulary, if the chosen set is such that the individuals of the set speak the same language.

We shall call all the common elements of a set of F.Cs the *kernel* of that set.

This kernel (K) is obviously a function of the set chosen and of the time. So if we choose individuals at the age of three we shall not find in the kernel any element of abstract language, while if the set is made of F.Cs of mathematicians we shall find in it many elements which are mathematical notions.

9. So the K is a group-notion. But it is the common part of F.Cs and could not exist without the F.Cs, *i.e.* without individuals. If all individuals of the set increase their F.C. in the same way, the K will increase too. For example, all Londoners have experienced bombing at the same time. It is a common experience and by definition belongs to the K of the Londoners.

When a group is chosen, and undergoes the same experiences, the K of this group changes. So the history of this group leaves its mark on the K, and we can even say that psychologically the history of the group is concretised in its kernel. It is not the facts which constitute the history but the psychological remains which represent the civilization of the group.

10. It is obvious that one must distinguish between the common part of all F.Cs and the totality of all the experiences contained in the F.Cs of the group. This last set might be far larger than the K. We shall call it the Aggregate (A) of all F.Cs, and might say that it represents the Philosophy of the group (or the Science, or the Knowledge).

We shall call the set remaining when we subtract the K from the A, *borders* (B). And we shall see the psychological significance of B and K. I state : " *K is the id of Freud*, and *B the inspiration of Marcault and Brosse* ".

11. In a given group G we have, to avoid unnecessary difficulties, to eliminate many F.Cs. For example, we shall consider a group of non-idiot adults having some degree of homogeneity (this means that we assume the existence of criteria which will allow us to segregate the individuals : *e.g.* a geographical criterion : all Englishmen ; a racial criterion : all negroes, etc.), and we shall characterize the group by its A and K.

According to our definitions, K contains all the biological experiences of the individuals of G. Consequently, if we consider a child living in the conditions of G, he will start his F.C. in K.

This is an extremely important point in our theory. A child is not taken into account in the definition of K. But a child of the group G will have to pass through all the common experiences of G, *i.e.* to integrate K.

But biological experiences are the first, and so every F.C. will start in K.

For the child, K is a new field of experience, for the adults it is the past. Youth is the time taken to integrate K ; but the adult who lives outside K does not understand that this integration of K is an original, a unique experience for the child.

So there exists a given set (itself variable and living) which represents the adult state of G and which is immanent for the child.

We have proved elsewhere [1] that this integration of K is made in the spontaneous activity of play, and we proved that each game is the codification of an adult activity biologically important for the group in the past. The psychological value of an adult activity will be transmitted into a series of actions which we adults call games, whereas they are strictly identical with a spontaneous conscious integration of this past activity.

12. When we are young, we follow a definite path ; as Freud said, we are more lived than we live. This passive part of us is constituted by the kernel. It seems passive because the set of elements we have to integrate is given. But the integration itself is perfectly active, and if we look at children we note it immediately.

But even this *id* is not integrated by everyone in the same way. Social traumatisms as well as natural ones may prevent

[1] C. Gattegno, " Études sur le Jeu ", *Bulletin de l'Institut d'Egypte* (1945).

one from integrating the whole kernel or from living through each group experience for the right time and in the right way.

As this integration is ignored by adults, it is no wonder that Freud, the first investigator of the id, says that the set which is the ego rests on, but is not sharply separated from, the id.

Change the perspective, and instead of starting with adults, take the child. You will see the id as an ego (in Freud's meaning) which becomes unconscious in our meaning. The conscious part of the F.C., which is less than the kernel, is Freud's ego, but the unconscious part of it is Freud's id. This id for all F.C. is the whole kernel; each id is a part of K. But we all, more or less (when the group is defined) go through the same experiences, therefore we can talk of the same id, identical with the kernel.

13. As we saw before, the kernel may or may not be integrated completely, and the psychological elements which are missing in the F.C. will constitute the gaps—origins of abnormal behaviour and neuroses. Moreover, as in ancient times some adults' experiences had a special acuteness, we shall find in youth (in the integration of the kernel) some deep experiences which are no longer understandable by adults. Thus in adolescence we find an acute investigation of love questions. It corresponds to acute investigations of love, a few hundred years ago in Europe.

14. It is important to note that most adults live intensely on their own plane, not noticing that there are other planes on which other adults and children live. It is only when a relativistic view-point is taken that we may hope to reach a certain true vision of life problems.

But as this relativity has still to be developed, the situation with which we are confronted is a double social life: (1) the adults', the general one, in which normally every adult lives; and (2) the children's, which is left aside by adults and investigated only when a pathological state of the adult demands it.

So Freud and his followers discovered the value of youth in the constitution of the F.C. only when traumatisms in adolescence had adult repercussions. They did not consider it as the beginning of life but as a trauma deposit. Freud had to climb to the first beginning of life when he discovered the continuity in life. But he still stuck to the view he got from his observations of adults.

Put together, continuity and the right perspective (from fusion of gametes until death) give the modern view in psychology: each experience in life has its place and its importance; traumatisms can happen at any moment and compromise the whole building of the F.C. of the individual.

As this building comprises two different parts with respect to the group: the integration of the kernel and the construction of a complement to it, but is one and the same operation with respect to the individual, we have always to say which viewpoint we choose.

The individual cannot judge what is missing in his F.C., and he *has to live* with what he has stored in it. He *is* his F.C. and his behaviour depends entirely on it, as a gait would be defined if one had only one leg.

But to the group (or to some individuals who are able to judge the differences between F.Cs and the kernel) the relation between a F.C. and the normal behaviour derived from the general—the gaps and the additions to the kernel may be obvious. That is why the best psychologist must have the widest F.C. and must be able to go through it in all directions.

15. The id contains all the group unconscious experiences, says Freud. This is just what we found in our kernel, but as it is a group-notion we had to keep it at this standard, and we saw that for children the id was quite different from what it is for the adult.

The Border (B) is for most adults in relatively the same position as the kernel is for the children. And as the child integrates the kernel actively during his youth, most adults have to integrate what, in B, is attractive for them.

In reality there is one F.C. which develops over A, and his contribution expressed in terms of K will be transmitted to some individuals. With time more and more individuals live this experience and make it a common experience, *i.e.* make it belong to K.

This is how civilization has progressed, but it is not true that every new experience passes from B to K. Many experiences are lost for the group, they remain in B.

It is the connexion between B and K that makes the progress of the group.

As the child sees where his father lives without being able to live there himself, the father's level is immanent for him and attracts him. That is why Freud identifies the super-ego with the father-complex, and Marcault calls this immanent life inspiration.

It is not only the father who lives at this level, but most adults (and we could say most fathers do not live at the top of the adults' levels), and as this life is psychologically connected through K (being for adults a prolongation of K and for the child a continuation of the part he integrates) the child is attracted to the adults' life, which is a super-ego ideal.

16. We see immediately the relations between ego, id and super-ego in Freud's meaning but in our picture. The ego is the part of the F.C. which is and can be conscious, the id is the part of K which is unconscious, and the super-ego is that part of A in which the social environment lives consciously.

17. This view does not exhaust the content of our notions but allows a uniform study of Freud's notions. As we promised, we have seen that the same image holds for the id and the super-ego and we have given a complete treatment of Freud's and Marcault's theory.

In the case of the latter we said that we can do without his levels theory. Here are our reasons:

Marcault claims to have discovered five or six levels in the psychological growth of the individual, and uses as tool what he calls " l'absolu psychologique ".

He looks for the psychological elements as defined by everyone: sensations, motions, emotions and thoughts, but he claims that the ego which follows a definite series of planes gives an absolute value to some kind of experiences leaving the others in the dark. Following in the life of individuals this absolute value, he determines his six levels: the sensorial, the active, the affective, the analytical, the social and the intuitive.

Although I do agree that these levels help a lot in a psychological investigation of the spirit, it makes me feel as if we described the numbers by saying that to go from 0 to 10 we pass through 1, 2, 3. . . . We do so pass, but the integers in the continuity of the numbers are not more important than any other number.

In the continuity of creation of life by an individual and the group, and in the continuity of integration of K, every experience has the same value, and level will not be given in advance, but should be attained after the organization of experience.

It is the investigation of how experience is deposited in the group aggregate that will decide on this point. We could agree for the moment with a levels theory if Marcault did not often talk of " subjective " levels for individuals and groups without enough clarity.

If one could prove that adults' conscious activity is organized according to a certain principle, we could imagine that levels would concretize these principles in the K. But we know that there is an infinite series of developments of the different F.C.'s which are not necessary, and that it is the principle of inspiration that directs some people in the traces of somebody else. If the group follows one or the other for a certain time we have to choose

one or the other to express a level. Human behaviour being individual, it can create an infinity of variable behaviours, and it is difficult to see how this will lead to a fixed level.

18. This discussion was necessary to show that Freud's and Marcault's theories, although highly based on observations, have not used enough care in the distinction of individual and group notions, and have not used continuity with its full power. We must leave for another mathematical paper the relativistic treatment of the sets of F.Cs.

III. Applications.

1. It is already clear from what was said above that my views can have applications to health considered as psycho-physiological harmony.

As life consists first of an integration of the kernel, and then is an autonomous development of one's F.C., we have two different needs with respect to the individual.

During youth we need an education which will allow a complete and thorough integration of all the codified experiences of the group, not through books and lessons, but through real experiments using the spontaneous activity of play as a guide. Education must get its real meaning, which is a training to mastery of all the psycho-physiological tools which will allow autonomy of the individual.

It is impossible to give here a complete account of methods which are already developed in the " New Education Technics ", and which will get their full meaning when brought into connection with the adult activity of previous times deposited in the kernel of the group.

2. The second need is in connection with adults who have suffered traumatism from nature or society ; and re-education is its name.

The different methods which have been used until now to prospect the F.C. keep their value. The only thing which differs is the fact that we do not expect a *reconstruction* of the F.C. after re-education, but only a " mending ". It seems impossible to give again to each experience connected with the injured elements the original value which it would have had if no trauma had happened.

Moreover, I think we can find a new method of prospection of the F.C. (normal or abnormal) if we know the series of natural presentation of experience in the group to which the F.C. belongs. Again, it is not the facts but their psychological meaning, which is stored in the kernel ; and a group has its history and, therefore,

a special structure for its kernel; a structure which must be found in the individual F.Cs.

3. To give an example, we can choose either a drawing or a behaviour towards games.

Drawings, as we show in a forthcoming publication,[1] are tools of investigation for the children. They follow a definite evolution according to the group to which the children belong, and represent a longer or shorter dwelling on certain elements, rather than on others, according to the importance which the group gave to them.

Knowing the normal development of drawings, we can classify any new drawing of a child belonging to a group and determine if he is integrating the kernel in the proper way.

Drawings have been used by some authors to psycho-analyse nervous children; and conversely, so to say, Rorschach's test uses the kind of drawings children see in an ink-stain to determine the type of child.

For us, drawings are spontaneous productions of children, and therefore must be related to what is not actually taught to them by the present generation of adults, but to what is deposited in the kernel.

4. If this view is correct, we must find a relation between all the spontaneous activities of children: drawing, games and speech. In fact, it is easy to prove that normal children change games not arbitrarily, but after training in a special kind of knowledge, training which complicates and develops. They abandon drawing at a stage where the plane surface does not correspond to their needs, which ask for the third dimension obtained in space games, such as ball games, skipping-rope, hop-scotch, leap-frog, etc. In space, art production means modelling, wood carving, construction of different kinds, etc. The speech at this stage is mainly formed by nouns joined by action verbs. Their logic is logic of action. They say " because ", which means: because it is done like this.

5. In my view there is an ego, and a set of experiences built by this ego: the field of cognition. This duality seems to me necessary, although we can see that the F.C. is a result of the ego's activity alone, and can be thought of in a monistic way.

Before going any further, I should like to propose the following experiment. We ask a man who has a knowledge of a special subject, say Chinese, or Higher Mathematics, or Endocrinology, to induce by hypnosis in an ignorant man the order of doing an

[1] E. K. Colborn and C. Gattegno, *Children's Drawing, a Psychological Study of Normal and Abnormal Art Production* . . . .

exercise in this difficult field—recite a Chinese prayer, integrate a difficult expression, or develop the synthesis of some recently discovered hormone, all this perfectly mastered by the inductor. We ask what will be the result ? If the medium cannot realize the order, as one would most reasonably expect, we see that the ego of the inductor can only take the place of another ego as an energetic level, but cannot use in another individual anything which does not exist in his F.C. But if the medium answers we must say that the monistic view is the true one.

6. This experiment could show many things, but until it is made we have to agree with either one or the other of the monistic or dualistic philosophies.

The dualistic is more helpful with respect to mental diseases, for it shows that it is either the ego who does not concentrate correctly on the experiences, or that the F.C. is not adequately developed compared with the needs of the individual.

Freud, and many psychiatrists, find in the reviving of the concentration of the ego by suitable exercises the way of giving confidence to the sick man and putting him again in the normal line, which is the understanding that life is the constitution of biological tools for a further investigation.

Again, Freud and many investigators think that the origin of many mental diseases is the maldevelopment of the F.C., through the omission of a large number of vital experiences, such as, for example, love experiences.

We have shown elsewhere [1] that nervousness appears whenever an individual is in contact with the unknown, and that this nervousness can go from simple hesitation to general paralysis ; so it is not to be wondered at if the maldevelopment of the F.C. leads to mental diseases which will be corrected, if possible, by trying to supply the missing elements of the normal F.C. But this means we must do some exercises, and we do not know if the necessary tools exist or are vivid at this time.

It seems, therefore, of interest to have a rational way of education which will consider all possible cases in the integration of the kernel and will give a training in the concentration of the ego. This will make mental diseases less frequent, and, we may hope, one day non-existent.

[1] C. Gattegno, " Contribution à l'étude psychologique du Trac ". *Bulletin de l'Institut d'Egypte*, 1941.

III.—EQUIVALENCE AND IDENTITY.

By C. Lewy.

I

I should like to discuss in this paper the view that logically equivalent propositions are necessarily identical: a view which has been expressed in the statement "If p follows from q and q from p then they are one and the same proposition" (Wittgenstein, *Tractatus*). Let us call this statement (1); and let us express (1) by saying "If p and q are logically equivalent, it follows that p and q are one and the same proposition". Thus (1) asserts that the proposition, which I shall call (*a*), namely, "p and q are logically equivalent", entails the proposition, which I shall call (*b*), namely, "p and q are one and the same proposition". Now, to say that (*a*) entails (*b*) is to say, of course, that the truth of (*a*) is a sufficient condition for the truth of (*b*), or more simply, that (*a*) is a sufficient condition for (*b*). And hence the question whether logically equivalent propositions are necessarily identical is equivalent to the question whether (*a*) is a sufficient condition for (*b*).

Now, it seems to me that it is not incorrect so to use the sentence "p and q are one and the same proposition" that (*a*) is *not* a sufficient condition for (*b*)—so to use it, in other words, that "p and q are logically equivalent" does *not* entail "p and q are one and the same proposition". I think this can be shown as follows. It seems to me that in *any* ordinary use of the sentence "p and q are one and the same proposition", p can correctly be said to be the same proposition as q only if from the proposition that x knows that p there follows the proposition that x knows that q and from the proposition that x knows that q there follows the proposition that x knows that p. In other words, I think that in any ordinary use of the sentence "p and q are one and the same proposition" the following proposition, "'x knows that p' is logically equivalent to 'x knows that q'", is a *necessary* condition for (*b*). And this can be expressed more clearly, though perhaps less unambiguously, by saying that p cannot correctly be said to be the same proposition as q unless anybody who knows that p must know that q and anybody who knows that q must know that p.

I have to confess that I simply do not see how this can be denied. I suppose some philosophers may, perhaps, wish to do

so; but, if they did, I feel certain they would be wrong: isn't it an obvious contradiction to assert that p and q are one and the same proposition, and that yet a man may know that p and not know that q or know that q and not know that p? It seems to me that it is; and I think, therefore, that we must agree that the proposition "Anybody who knows that p must know that q and anybody who knows that q must know that p"—a proposition which I shall call (c)—is a necessary condition for (b). In fact, I think we should be justified in going further: I think it is not incorrect so to use the sentence "p and q are one and the same proposition" that the proposition expressed by it not only entails, but also is entailed by, the proposition expressed by the sentence "Anybody who knows that p must know that q and anybody who knows that q must know that p"—so to use it, in other words, that (c) is not only a necessary condition for (b) but also a sufficient condition.

But now, if (c) is a necessary condition for (b), (a) can't be a sufficient condition for (b) unless (c) is a necessary condition for (a). In other words, if "p and q are one and the same proposition" entails "Anybody who knows that p must know that q and anybody who knows that q must know that p", then "p and q are logically equivalent" cannot entail "p and q are one and the same proposition" unless it entails "Anybody who knows that p must know that q and anybody who knows that q must know that p". But does it? Does (a) entail (c)? I think it is not incorrect so to use the sentence (c) that (a) does not entail (c). For consider the following two propositions, (α) "x knows that rain is good for the crops" and (β) "x knows that if anyone were to broadcast that rain is good for the crops he would be right". Is it the case that (α) entails (β), *i.e.* that if (α) is true, (β) *must* be true? It seems to me that it is not incorrect so to use the sentences expressing these two propositions that (α) does not entail (β). For it seems to me that it is not incorrect so to use the sentence "x knows that p" that x cannot be said to know that p unless he is familiar with all the concepts contained in p. And it is, of course, perfectly possible that a man should know that rain is good for the crops and yet should not be familiar with the concept, or the idea, of broadcasting; or, as we might naturally express it, it is perfectly possible that a man should know that rain is good for the crops and yet should never have heard of such a thing as broadcasting. In fact there can be little doubt that there are actually lots of such people: and all I am saying is that it is not incorrect so to use the sentence "x knows that p" that such people do *not* know that if anyone

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were to broadcast that rain is good for the crops he would be right, although they do know that rain is good for the crops. To put it in another way: I think it is not incorrect so to use the sentence "x knows that p" (or, to take our specific example, the sentence "x knows that if anyone were to broadcast that rain is good for the crops he would be right") that the assertion, "x knows that if anyone were to broadcast that rain is good for the crops he would be right, but x has never heard of broadcasting", is self-contradictory. And this, also, seems to me to be quite plain: if anybody maintained that it is definitely incorrect to use the sentence in question in such a way that the above assertion is self-contradictory, I could only reply that he is plainly wrong.

Now, what does it all come to? It comes to this: that it is not incorrect to use the sentence (*c*), namely, the sentence "Anybody who knows that p must know that q and anybody who knows that q must know that p", in such a way that the proposition expressed by it entails that q contains no concept which p doesn't contain and p contains no concept which q doesn't contain. It is not incorrect, to put it simply, so to use the sentence (*c*) that the proposition (*c*) entails the proposition, which we may call (*d*), "p and q contain the same concepts". But now, if this is so, and if it is also the case that (*b*) entails (*c*), it follows that it is not incorrect so to use the sentence (*b*), namely, the sentence "p and q are one and the same proposition", that the proposition (*b*) entails the preposition (*d*). That is to say, it is not incorrect so to use this sentence that "p and q are one and the same proposition" entails "p and q contain the same concepts". Hence, if in this use of the sentence (*b*), the proposition (*a*), *i.e.* "p and q are logically equivalent" were to entail the proposition (*b*), *i.e.* "p and q are one and the same proposition", it would have to entail the proposition (*d*). But it is quite certain that (*a*) does not entail (*d*): for it is quite certain that the proposition "Rain is good for the crops" is logically equivalent to the proposition "If anyone were to broadcast that rain is good for the crops he would be right", and also quite certain that this latter proposition contains concepts, *e.g.* the concept of broadcasting, which the former does not contain. And from this it follows that it is not incorrect so to use the sentence "p and q are one and the same proposition" that from the proposition that p and q are logically equivalent it does *not* follow that p and q are one and the same proposition; in other words, so to use this sentence that (*a*) "p and q are logically equivalent" is *not* a sufficient condition for (*b*) "p and q are one and the same proposition".

And this can also be expressed in yet another way, namely, by saying that it is not incorrect so to use the sentence "p and q are one and the same proposition" that there may be instances of logically equivalent propositions which are yet not the same.

II

That all this is true I feel reasonably certain. But now I am coming to a number of points about which I do not feel certain at all. I think it is quite possible that what I am going to say is wrong, and it must therefore be regarded as of a purely tentative character.

It will, no doubt, have been noticed that my conclusion is merely that it is not *in*correct so to use the sentence "p and q are one and the same proposition" that (a) "p and q are logically equivalent" does not entail (b) "p and q are one and the same proposition": I have *not* asserted that to do so would be definitely correct and that it would be definitely incorrect to use this sentence in some other way. And I have not asserted this because I do not feel certain that I should be right in doing so: I think it possible that it is *also* not *in*correct so to use this sentence that (a) does entail (b). Let us consider this suggestion. I have said earlier on, first, that in *any* ordinary use of the sentence "p and q are one and the same proposition", to say that p and q are one and the same proposition entails that anybody who knows that p must know that q, and anybody who knows that q must know that p; and, secondly, that it is not incorrect so to use the sentence "Anybody who knows that p must know that q and anybody who knows that q must know that p" that the proposition expressed by it entails that p and q contain the same concepts. But now, is it not possible that it is *also* not incorrect so to use this sentence that the proposition expressed by it does not entail that p and q contain the same concepts? I am inclined to think that it would *not* be incorrect so to use this sentence, though I am also, at the same time, inclined to think that it *would* be incorrect so to use it. And the considerations which incline me to say both of these contradictory things are as follows. Let us consider again the two propositions (α) "x knows that rain is good for the crops", and (β) "x knows that if anyone were to broadcast that rain is good for the crops he would be right". And let us suppose, first, that a man, x, does know that rain is good for the crops, and, secondly, that he is not familiar with the concept of broadcasting. He may, for instance, be a present-day savage or indeed anybody who has never heard of any such thing as broadcasting. Suppose now that we ask an

English-speaking person whether x knows that if anybody were to broadcast that rain is good for the crops he would be right. What answer should we get? I feel quite certain that he would not unhesitatingly reply that x does know this; and I feel also quite certain that he would not unhesitatingly reply that in a sense x does know this but in a sense he doesn't. But would he unhesitatingly reply that x doesn't know it? I think he may simply not know what to say: I think he may be strongly inclined to say x doesn't know it, but may also be inclined, though perhaps less strongly, to say that x does know it. And even if, in the end, he replied that x didn't know it, I am inclined to doubt whether he would do so without hesitation. And this is what makes me think that, perhaps, though it is not incorrect so to use the sentence "Anybody who knows that p must know that q and anybody who knows that q must know that p" that the proposition expressed by it does entail that p and q contain the same concepts, it is *also* not incorrect so to use this sentence that the proposition expressed by it does not entail this. But now, if this is so, then, I think, it is obvious that it is not incorrect so to use the sentence "p and q are one and the same proposition" that (*a*) "p and q are logically equivalent" does entail (*b*) "p and q are one and the same proposition": for, as I have said, it is not incorrect so to use this sentence that the proposition expressed by it is logically equivalent to the proposition expressed by the sentence "Anybody who knows that p must know that q and anybody who knows that q must know that p", and if this latter sentence *can* be used, not incorrectly, in the second way I have suggested, then, in this use, the proposition expressed by it is entailed by the proposition "p and q are logically equivalent".

But, as I have just said, I am not certain that this latter sentence can be used, not incorrectly, in this way: for though I am inclined to doubt whether a person who knew how this sentence is ordinarily used would unhesitatingly say that the man, in our example, does *not* know that if anyone were to broadcast that rain is good for the crops he would be right, I am not certain of it.

So far, however, I have merely explained why I feel inclined to say that it is not definitely incorrect (though not, of course, definitely correct, either) to use this sentence in the required way, and yet do not feel certain that I should be right in doing so. But, in fact, my puzzlement is even greater, for I am also positively inclined to say that it *is* incorrect so to use this sentence. And I am inclined to say this because, if the usage in question

were not incorrect, it would follow, of course, that it is not incorrect to use the sentence "x knows that p" to mean what could also be expressed, not incorrectly, by the sentence "x *would have* known that p if he had been familiar with all the concepts contained in p". But isn't it very doubtful whether "x knows that p" can be so used? I cannot help thinking that it is, though I am unable to say why I think so.

It may, however, be said, "It is a very odd situation that you, who after all know the correct usage of the sentence 'p and q are one and the same proposition' as well as anybody, should yet be inclined to think both that it is definitely incorrect to use it in such a way that the proposition expressed by it does not entail that p and q contain the same concepts, and also that it is neither definitely correct nor definitely incorrect so to use it. What sort of doubt is this?" I think this would be a perfectly proper comment: I agree that this is an odd situation, and yet I do not know how to explain it. Perhaps, however, my inclination to say both of these things shows that our actual usage of the sentence "p and q are one and the same proposition" is such that it is very nearly, though not quite, incorrect to say that the proposition expressed by it does not entail that p and q contain the same concepts; in other words, that our usage of it is such that the fact that p and q do *not* contain the same concepts counts very strongly against saying that p and q are one and the same proposition, perhaps counts against it almost conclusively, but not quite conclusively. And if this is so, we can say that it is a mistake to regard the propositions "p and q contain the same concepts" and "p and q are logically equivalent" as being two different "criteria" for "p and q are one and the same proposition": for whilst it is definitely correct to say that the second proposition is a necessary condition for the third, it is only very nearly correct to say that the first is a necessary condition; and whilst it is definitely incorrect to say that the first proposition is a sufficient condition for the third, it is only very nearly incorrect to say that the second is a sufficient condition.

I do not know, however, whether the suggestion which I made in the last paragraph in answer to the objector's question is true, or indeed whether it has meaning.

III

I think I can also explain in another way why I am inclined to think that it is not definitely incorrect so to use the sentence "p and q are one and the same proposition" that what is ex-

pressed by it follows from "p and q are logically equivalent". Let us consider the sentence "p and q convey the same information": it seems to me that it is not definitely incorrect so to use this sentence that the proposition expressed by it follows from the proposition that p and q are logically equivalent. That is to say, that it follows from this proposition that q conveys no information which p doesn't convey and that p conveys no information which q doesn't convey. For instance, I am inclined to think that it is not definitely incorrect so to use the sentence "p and q convey the same information" that "It is true that London is larger than Cambridge" conveys exactly the same information as "London is larger than Cambridge" and "If anyone were to broadcast that rain is good for the crops he would be right" conveys exactly the same information as "Rain is good for the crops". And I am also inclined to think that it is not definitely incorrect so to use the sentence "p and q are one and the same proposition" that whenever p and q can be said, not incorrectly, to convey one and the same information, it follows that p and q are one and the same proposition. Hence, I am inclined to think that it is not definitely incorrect so to use this sentence that "p and q are logically equivalent" entails that p and q are one and the same proposition.

But if this is so, and if it is also the case, as I think it obviously is, that "p and q are logically equivalent" does not entail that p and q contain the same concepts,[1] then it follows that it is not incorrect so to use the sentence "p and q are one and the same proposition" that what is expressed by it does not entail that p and q contain the same concepts. Yet, as I have said before, I think it is definitely incorrect so to use this sentence that the proposition expressed by it does not entail "Anybody who knows that p must know that q and anybody who knows that q must know that p"; hence, it follows that it cannot be incorrect to use this last sentence so that the proposition expressed by it does not entail that p and q contain the same concepts. But we have seen that there seem to be reasons for supposing that this *is* definitely incorrect; and hence, unless the suggestion which I made in the last section is true, here is a dilemma which I cannot solve. The only thing that does seem to me to be quite certain is that it would be wrong to deny the premiss that it is

[1] This, I think, is obvious; for the two propositions "Rain is good for the crops" and "If anyone were to broadcast that rain is good for the crops he would be right" are certainly logically equivalent, and yet the second contains concepts which the first doesn't contain, *e.g.*, the concept of broadcasting.

definitely incorrect so to use the sentence "p and q are one and the same proposition" that what is expressed by it does not entail "Anybody who knows that p must know that q and anybody who knows that q must know that p". For if this is not definitely incorrect, it follows, of course, that it is not definitely incorrect to say that the assertion, "p and q are one and the same proposition, and x knows that p, but x doesn't know that q" is not a contradiction: and I think it *is* definitely incorrect to say that this is not a contradiction.

IV

There is another point which I should like to discuss a little further. I have said earlier on that it is not incorrect so to use the sentence "p and q are one and the same proposition" that the proposition expressed by it is logically equivalent to the proposition expressed by the sentence "Anybody who knows that p must know that q and anybody who knows that q must know that p". And I have also said, in the concluding paragraph of the last section, that it is definitely incorrect so to use the former sentence that the proposition expressed by it does not entail that expressed by the latter. I have therefore implied that whilst it is definitely correct to say that "Anybody who knows that p must know that q and anybody who knows that q must know that p" is a necessary condition for "p and q are one and the same proposition", it is merely not *in*correct to say that it is a sufficient condition. I have implied, in other words, that whilst it is not incorrect so to use the sentence "p and q are one and the same proposition" that "Anybody who knows that p must know that q and anybody who knows that q must know that p" does entail that p and q are one and the same proposition, it is *also* not incorrect so to use it that this entailment does not hold. And it seems to me that this is true for the following reason. I think it is not incorrect so to use the sentence in question that p and q cannot be said to be one and the same proposition unless anybody who is *thinking* that p must necessarily, at the same time, be *explicitly thinking* that q and *vice versa*; or, to put it differently, unless anybody who is considering (or entertaining or contemplating) the proposition that p must be considering the proposition that q and *vice versa*. That is to say, if p brings explicitly before one's mind any idea which q doesn't bring explicitly (or *vice versa*), then p and q are not one and the same proposition. It is in this usage that the proposition "x is a brother" may be said, not incorrectly, to be a different proposition from the proposition

"x is a male sibling", though it is obviously *also* not incorrect to say that they are one and the same proposition.[1]

V

I may be asked, however, what exactly do I mean by an expression which I have repeatedly used in the course of this paper, namely, the expression "q contains a concept which p does not contain". I think it is very difficult to give a precise definition of what is meant by saying this, though I also think that it is clear enough that it expresses something which is often true. It is obvious, for instance, that if a man is familiar with all the concepts contained in the proposition "Rain is good for the crops", it by no means follows that he is also familiar with the concept of broadcasting which is contained in the proposition "If anyone were to broadcast that rain is good for the crops he would be right"; and hence it is obvious that the second proposition contains a concept which the first does not contain. On the other hand, if a man is familiar with all the concepts contained in "x is a brother", he must be familiar with all the concepts contained in "x is a male sibling"; hence the second proposition contains no concept which is not contained in the first. Conversely, the first proposition contains no concept which is not contained in the second: for if a man is familiar with all the concepts contained in the second, he must be familiar with all the concepts contained in the first. And finally, the proposition "John is my elder brother" contains a concept not contained in "John is my brother", but the latter proposition contains no concept not contained in the former. Perhaps, therefore, we might say in general terms that q contains no concept which p

[1] *Cf.* G. E. Moore's "Russell's Theory of Descriptions" in *The Philosophy of Bertrand Russell*, pp. 208-210, where Moore makes the same point. On the other hand, in *The Philosophy of G. E. Moore*, though he only gives the weaker condition ("Anybody who knows that p must know that q") as a necessary one for q being an analysis of p (p. 663), he also seems to regard the stronger condition ("Anybody who is thinking that p must be thinking that q") as somehow relevant. For he implies by what he says about a specific example (p. 599) that the fact that the stronger condition fails to be satisfied seems to give a good, even if not conclusive, reason for supposing that q is not a definition (*i.e.*, analysis) of p. It seems to me, however, that in this case he would have to say that there seems to be a good reason for supposing that *no* concept can be analysed, in his sense of "analysis". For I think that *no* analysis satisfies both this stronger condition and also the condition that the expression used for the *analysans* must explicitly mention concepts which are not explicitly mentioned by the expression used for the *analysandum*, a condition which he also regards as necessary (p. 666).

does not contain if and only if anybody who is familiar with all the concepts contained in p must be familiar with all the concepts contained in q, and that q does contain a concept which p does not contain if and only if it is possible that a man should be familiar with all the concepts contained in p and yet not be familiar with all the concepts contained in q.

It is, however, important to realize that we cannot define the meaning of this expression by saying "q contains a concept which p does not contain if and only if the sentence 'q' contains an expression which is not synonymous with any expression (or expressions) contained in the sentence 'p'". We cannot do so if only because, on this definition, the proposition "x is a male sibling" contains a concept which is not contained in the proposition "x is a brother": for there is no expression (or expressions) in the latter sentence which is synonymous with the expression "male" contained in the former sentence. Yet it is obvious that the proposition "x is a male sibling" contains no concept which is not contained in the proposition "x is a brother", although the sentence expressing the first proposition does mention explicitly concepts which are not mentioned explicitly by the sentence expressing the second. It may be thought that this defect can be remedied by adding to the *definiens* a further clause, namely, the clause "and the *whole* sentence 'p' is not synonymous with the *whole* sentence 'q'". This, however, would not be enough. For it follows from what I said in the last section that it is not incorrect to say that the sentence "x is a brother" is *not* synonymous with the sentence "x is a male sibling", though it is also not incorrect to say that it is. But if we reformulated the clause to run "and it is incorrect to say that the whole sentence 'p' is synonymous with the whole sentence 'q'", we should have to give some further criterion which would enable us to decide under what conditions this is incorrect. Now, it would not be safe to give as such a criterion, "It is incorrect to say that the sentence 'p' is synonymous with the sentence 'q' if and only if it is incorrect to say that p and q are one and the same proposition". For *if* it were the case that it is not incorrect so to use the sentence "p and q are one and the same proposition" that what is expressed by it is entailed by "p and q are logically equivalent", then from the fact that it is incorrect to say "the sentence 'p' is synonymous with the sentence 'q'", it would *not* follow that it is incorrect to say "p and q are one and the same proposition". I think the only criterion which will do is, "It is incorrect to say that the sentence 'p' is synonymous with the sentence 'q' if and only if

it is possible that a man should be familiar with all the concepts contained in *p* and yet not be familiar with all the concepts contained in *q* or *vice versa*". But, in this case, the explanation reduces itself to that which I gave at the beginning of this section. And I see no other way of explaining what is meant by the expression "*q* contains a concept which *p* does not contain".

It should be noticed, finally, that what I have said in this section brings out in yet another way the unplausibility of supposing that it is not incorrect so to use the sentence "*p* and *q* are one and the same proposition" that what is expressed by it follows from "*p* and *q* are logically equivalent": for in this case it may be true that it is *not* definitely incorrect to say that *p* and *q* are one and the same proposition and yet also true that it *is* definitely incorrect to say that the sentence 'p' is synonymous with the sentence 'q'.

IV.—INDUBITABLE EXISTENTIAL STATEMENTS.

By Arthur Pap.

In this paper I shall challenge the epistemological generalization, which is by many philosophers accepted as almost axiomatic, that all empirical existence assertions are inherently doubtful or, to use the familiar language, are "merely probable hypotheses". It is widely held that if a statement is indubitably true or "necessary", its truth can be established by semantic analysis; but such a statement is said to convey only information about the use of language and not about empirical existence. The "necessary" statements referred to are, of course, the familiar *analytic* statements, such as the statement "all spinsters are unmarried". The fact that such analytic statements, which can be expressed as formal implications (*i.e.* statements of the form "for every x, if x is S then x is P"), assert nothing about empirical existence, is taken account of by logicians in the phrase "they have no existential import"; that is, if "for every x, if x is S, then x is P" is analytic, it does not imply that "there is an x, such that x is S and x is P".[1]

Analytic statements, then, have no existential import, and may be roughly characterized as statements whose truth follows from the very meaning of their terms. Now, I should like to call attention to a class of statements which are explicitly existential statements, which are not analytic in the usual sense (their contradictories involving no formal inconsistency), which have, however, the peculiar character that they are true, if they are at all significant. Since they are true, provided they are significant, their truth does not have to be established by inductive methods, but may be disclosed by mere semantic analysis. In this respect they closely resemble analytic statements; and since a statement whose truth is entailed by the fact that it is significant, cannot very well be said to be a "merely probable hypothesis", these

[1] In Russell's non-modal logic, indeed, formal implications have no existential import, no matter whether they express analytic or empirical truths. One could, however, think of a logic which reflected in its symbolism the distinction between inductive generalizations and analytic A-propositions, and in which the A-propositions that express inductive generalizations would have existential import.

existential statements may properly be said to be indubitable or certain. It should be kept in mind, though, that the epistemological assertion which is here made and argued for, is not the assertion that some existential statements are necessarily true, but that some existential statements are such that their truth *necessarily follows* from the fact that they are significant.

That truth should be entailed by significance is, as was suggested above, "peculiar", since normally significance is a necessary, but not a sufficient condition for truth. This very fact that while all sentences that are true are also significant, not all significant sentences are true (false sentences not being necessarily insignificant), is the main reason why, with respect to empirical sentences at least, the need is commonly felt to postulate *propositions* as intermediate entities between the written or spoken sentences on the one hand, and the empirically ascertainable facts which verify the sentences, on the other hand. A sentence, then, is said to be significant in so far as it expresses a proposition; but the expressed proposition itself may be either true or false, and hence to establish that a sentence is significant is normally a far cry from establishing that it (or the proposition which it signifies) is true. Indeed, to *define* a term, and thus to make explicit the full meaning of a statement in which it occurs, is one enterprise, and to show that such a term has any *application* to existents, is quite a different enterprise. Yet, this duality of meaning-analysis and empirical verification obtains only where we are dealing with complex ideas (to use Lockian terminology) that may be *verbally* defined in terms of their relatively simple constituents, but, as will be shown, breaks down when we come to the definition of simple ideas,[1] which of necessity can be only ostensive or denotative.

Before proceeding to produce examples of such indubitable existential statements whose truth follows from the fact that they are intelligible, let me make clear which sort of statements, formally similar to the ones I have in mind, I am not referring to. I am not referring to mathematical existence theorems which are necessary in the sense that the universal statements that are obtainable by negating them, involve a self-contradiction. Obviously, the "existential" statements to be discussed have nothing to do with formally demonstrable existential statements

[1] It should be noted that whenever, in this paper, the expression "simple idea" is used, all that is meant is *relative* simplicity. No assumption of the existence of *absolutely* simple and intrinsically unanalyzable concepts is involved. A "simple idea" is only unanalyzed in a given universe of discourse, without being necessarily unanalyzable in any universe of discourse.

that assert the existence of mathematical entities, such as the theorem "there exists one and only one finite limit to any infinite convergent series".

To come, finally, to illustrations of the sort of statements which I wish to discuss, consider the following existential statement: "There exist red surfaces (*i.e.* at least one)".[1] Now, compare this existential statement with the statement, identical in logical form, "there exist accelerated motions". The latter statement could very well be false without being unintelligible; but if the former statement were false, it would be unintelligible and insignificant. If no accelerated motions existed, we could nevertheless understand what is meant by "accelerated motion", since this expression admits of verbal definition. The concept of acceleration, that is, may be definitionally resolved into the simpler concepts of velocity and time-rate of change. If either no forces acted upon the particles in the universe, or the forces acting upon particles balanced each other exactly, no accelerated motions would exist. May be that, owing to Hobbes' sensationalist principle that "imagination is nothing but decaying sense", we could not, living in such an inertial universe, *imagine* what accelerated motion would be like, still we should *understand* the expression "accelerated motion"; just as we understand what is meant by a "chiliagon" even though we cannot imagine one. Matters are altogether different in regard to the statement "there exist red surfaces". In an inertial universe no *ostensive* definition of "accelerated motion" could be given; but the expression would nonetheless be meaningful or intelligible, since it may be *verbally* defined. It is on account of their verbal definability that terms denoting nothing that exists have nevertheless a meaning; we may form ideas of things that are not to be found on sea or land, such as dragons and mermaids and hypersurfaces. But a term like "red" can be defined only ostensively, by pointing to objects that have the quality it designates.[2] Hence, since

[1] "Exist" here, as well as in any subsequent illustration, is intended in a *tenseless* sense, *i.e.* in the sense in which it would be true that there exist red surfaces even if *at present* none exist, provided some red surfaces existed in the past. This tenseless usage of the existential quantifier is formally justifiable, since temporal qualifications can be expressed through temporal co-ordinates describing the temporal position of the described object, without changing the meaning of the existential quantifier.

[2] The so-called "causal" definitions of colour-terms in terms of wavelengths with which the colours are correlated really amount to statements of physical conditions of determinate sensations, and hence are not to be regarded as "definitions" in the sense in which a definition explains the meaning of a term.

verbal definition [1] and ostensive definition are the only methods by which the meaning of a term can be exhibited, in a universe containing no red objects or surfaces, "red" would be meaningless, and the existential statement "there are red surfaces" would be not just false, but strictly insignificant. In other words, unless at least one red surface (or patch) existed, by pointing to which the meaning of "red" could be explained, the statement "there exist red surfaces" would be as unintelligible as the statement "abracadabra exists". Existential statements of this sort, then, have the peculiar character that the condition of their intelligibility is at the same time the condition which verifies them.

The belief that all existential statements are "merely probable hypotheses" naturally arises as follows. An existential statement may be regarded as a condensed version of a logical sum of elementary statements (where by an elementary statement is meant a predication of a property upon an empirical constant); that is '$(\exists x)\mathrm{F}(x)$' is short for '$\mathrm{F}(a)$ or $\mathrm{F}(b)$ . . . or $\mathrm{F}(n)$', where $a, b \ldots n$ are objects that may have the property F.[2] Now, each of the logical summands (alternatives) is a merely probable statement, since there are empirical data or "danda" which might falsify it. As especially C. I. Lewis has emphasized, in classifying a perceived particular, one implicitly predicts that, in addition to the properties which constitute the immediate basis for the classification, it will exhibit certain other properties if special operational conditions are realised. Since these implicit predictions may not be verified, we can never be *certain* [3] that our classification is correct. Now, even though by the addition theorem of the probability calculus, the probability of a logical sum is necessarily greater than the probability of any summand (alternative),[4] the probability of a logical sum of merely probable

[1] The term "verbal definition" is here used in the broad sense of "non-ostensive" definition. Thus it does not refer exclusively to explicit definitions, which resolve a complex concept into its elements, but also to contextual definitions such as definitions in use and implicit (postulational) definitions.

[2] Whether one adopts a finitistic point of view, according to which existential statements can be significantly analyzed into logical sums only if the existential quantifier is restricted to a finite number of values, *i.e.* if the logical sum is finite, or not, is irrelevant to my argument.

[3] See, though, the criticism of this "fallibilism" on pp. 244-5.

[4] Notice that an existentially quantified general statement has necessarily more certainty than any one of its "atomic" verifiers. This simple observation destroys the empiricistic prejudice that the dubitability of statements increases with their generality, and that it is the atomic basic sentences which express the most certain knowledge.

alternatives is itself less than unity (*i.e.* it is not certain that at least one of the alternatives is realised). Hence no existential statement, interpreted as a logical sum of predications, can be certain.

If this epistemological conclusion, however, is to be generally valid, the logical summands, into which an existential statement may be analyzed, must all of them have the character of empirically testable predications. If, on the other hand, at least one of the logical summands should turn out to have the character of an ostensive definition, the existential statement would not be a dubitable empirical hypothesis, but would be analytic in the sense of being *true by ostensive definition*— a kind of analyticity just as deserving of the philosopher's attention as the more familar analyticity that is possessed by statements which are true by *verbal* definition. Consider, to illustrate, the statement " there exists at least one rod which has exactly the length of 1 meter ". This statement is equivalent to the logical sum " either a is 1 meter long or b has that property . . . or n has that property ", where the series a . . . n includes all the rods in the universe. Now, with respect to n-1 rods in the universe it is, indeed, a question of *fact* whether their length is or is not exactly 1 meter. But if the expression " 1 meter " is to have a meaning at all, one rod in the universe must have the predicated property by ostensive definition (this is, of course, the standard meter); hence the above existential statement is analytic in the special sense of being both significant and true by ostensive definition.

I am really doing no more than drawing an obvious inference from the well-founded positivistic thesis that all connotative meaning is ultimately rooted in denotative meaning, or that any verbal definition, in order to be ultimately intelligible, must verge into an ostensive definition. To be sure, it would be unreasonable to postulate that every significant term should be capable of both verbal and ostensive definition; this would be equivalent to postulating that the realm of concepts should not extend beyond the realm of percepts. Scientific procedure, at any rate, does not observe this postulate. Thus, in the exact sciences many terms are significantly employed, whose meaning could not be exhibited in terms of anything directly observable; this may be illustrated in terms of any physical interpretation of the calculus notion of the derivative, such as acceleration or density. But such terms must be capable of being related, by a series of verbal definitions, to terms which *are* ostensively definable, *i.e.* terms whose meaning may be exhibited by pointing

to one or several instances to which they are applicable. Obviously, if no term were significant unless it admitted of verbal definition, the argument from infinite regress could be applied to prove that no term is significant; in the same way as from the postulate that no statement is to be regarded as true unless it can be proved it would follow that no statement can be regarded as true. Hence connotative meaning (the sort of meaning exhibited by verbal definitions) is inevitably correlative to denotative meaning, just as theorems are inevitably correlative to axioms. Any universe of existential [1] discourse, then, must contain some terms whose meaning is denotative, not connotative. And any significant term that has no empirical application, designating a concept of which there are no instances, must be verbally definable by terms whose meaning can be communicated only through *pointing* to examples.

Plainly, the application of a verbally defined term to an object is always a cognitive operation in the sense of involving a verifiable predication; for it has to be verified whether the object to which the term is applied exhibits the properties designated by the *definientes* of the applied term. But the application of significant terms which are not verbally defined—whether this lack of verbal definition be due to theoretical or practical difficulties—cannot always be a verifiable predication. For what would it mean to verify whether such a term really applies to the instance in question? It would mean to ascertain whether the instance is, in the relevant respects, sufficiently similar to some standard instance to which the same term is applicable by *convention* or, more specifically, by ostensive definition. In other words, to verify whether a "this" is correctly called a "such and such", means to ascertain whether it is, in the relevant respects, similar to some standard "this" which is *conventionally* called a "such and such". Thus, to illustrate, it could never be verified whether two time-intervals *are* equal, unless it were first agreed that the period of some ostensible motion is to be *called* constant. Or, to give another example of what Reichenbach calls a "co-ordinating definition" (unfortunately applying this term not only to the sort of ostensive definition here illustrated but also to a specific kind of verbal definition, *viz.* the interpretation of the primitive terms of an abstract postulate set): before it can become a verifiable matter whether a given rod is rigid (*i.e.*

[1] Existential discourse is intended as a contrast to formal or mathematical discourse. The problem of the nature of mathematical meaning and the relationship between significance and truth within mathematical discourse, is, fortunately, irrelevant to my present topic.

invariant in length), some ostensible rod must be conventionally *called* rigid.

Every-day language, unlike an ideal scientific language, lacks such co-ordinating definitions which definitely *standardize* the usage of a term endowed with denotative meaning. For example, people have not agreed upon a standard red patch, so to speak, by comparison with which it is to be decided whether any other patch *is* an instance of redness. The "standard", here, is common usage, which is admittedly a much vaguer kind of a standard than a standard rod or a standard mass or a standard clock. A given surface *is* red, if it has the sort of quality which people commonly *call* "red", and a given piece of furniture *is* a table, if it is the sort of thing which people commonly *call* a "table". Now, the kind of meaning which renders most descriptive terms in common use intelligible, is undoubtedly denotative; for most people are unable to give even remotely adequate verbal definitions of the terms which they constantly apply, and often *correctly* apply. Hence, it follows from the very fact that such terms in common use are intelligible, that there *exist* objects to which it is correct to apply those terms. That unless red patches existed, the word "red" would be devoid of meaning, that unless tables existed, the word "table" would be an insignificant sound, seems almost too trivial to be mentioned. Yet, the mention may be redeemed from the charge of triviality by showing that many imposing philosophical statements are of exactly the same character as the statement "nothing in the universe ever was or is red" or "no really solid objects exist".

Consider, for example, the Berkeleyan doctrine of subjective idealism, according to which only ideas and selves that have ideas, but no extra-mental realities exist. If my memory does not deceive me, no less a philosopher than Whitehead thinks that no conclusive theoretical refutation of this solipsistic theory can be produced. Such a negative existential statement, however, may be refuted by the same kind of semantic analysis as the statement "no red patches exist". Ideas are essentially ideas of something, they have, to use a familiar philosophical phrase, objective reference. Even though some ideas are ideas of a higher order, so to speak, in the sense that their objective referents are themselves ideas, we must ultimately start from first order ideas, whose objective referents are not themselves ideas. Suppose we call those objective referents of first order ideas, whether they be qualities or substances, "physical realities".[1] The doctrine of

[1] I am, for the purpose of the argument, confining myself to what Locke called "ideas of sensation", disregarding "ideas of reflection", whose objective referents are mental processes.

subjective idealism or solipsism may then be expressed by the statement "there are no physical realities", or the equivalent statement "there exist only ideas in selves or minds".[1] Now, if no physical realities, different from ideas *of* physical realities, existed, how could you explain what you *mean* by "physical reality", as distinct from "idea"? How, in other words, could the expressions "idea" and "physical reality" have different meanings, if what are by common sense supposed to be physical realities were always strictly identical with ideas? Hence, if subjective idealism were true, the statement "there are no physical realities" would be synonymous with the statement "there are no ideas", hence subjective idealism if true, is false.[2] But a statement whose truth implies its falsehood, is not simply false in the ordinary sense of "false", but meaningless.

Subjective idealism, in less analytical and more mystical versions, sometimes suggests that there is no distinction between waking and dreaming, that since we are "windowless monads", it cannot be disproved that our life is a continued dream. No less a philosopher than Descartes thought that this supposition could be disproved only in terms of the theological dogma that God, being by definition good, could not thus mercilessly deceive his own creatures. Here, again, we may raise our rhetorical question: Unless there existed at least one x, such that the statement "x is a waking episode of my life" is true, how could I understand what is meant by "waking" and contrast this meaning with the meaning of "dreaming"? Not that this recurrent rhetorical question implies that, quite generally, the fact that a term has a distinctive meaning implies that there exist instances to which the term may be correctly applied. For a term may have connotative meaning without having denotative meaning. For example, it would be a bad imitation of the method

[1] I purposely avoid the Berkeleyian version "*esse* is *percipi*", on account of the ambiguity of the copula. The copula may be used to assert a synonymity, to predicate, or to express a causal dependence, as in the statement "heat is molecular motion". If subjective idealism is understood in the latter sense, that is as the assertion that nothing exists unless it is perceived, it implies that nothing exists. For just as, according to the doctrine, a table could not exist unless there exists an idea of the table, an idea of the table could not exist unless there existed an idea of the idea of the table, etc., *ad infinitum*. Since the existence of anything would thus depend on the existence of an infinite hierarchy of ideas, and the latter manifestly does not exist, nothing at all would exist. (*Cf.* G. E. Moore, "The Refutation of Idealism", *Philosophical Studies*, pp. 29-30).

[2] May be this illustrates what Hegel might have meant by his doctrine that an abstracted opposite, by an inherent "dialectic", negates itself and is converted into "its other".

here applied, to attempt to refute the statement "infinity does not exist" by asking "if it did not exist, how could you understand what is meant by 'infinity'?" For the infinite may be verbally defined as a class which is similar to a proper part of itself, and then the question whether such "reflexive" classes exist could not be answered by reference to linguistic usage. The same confusion of connotative and denotative meaning, or verbal and ostensive definition, underlies Descartes' psychological proof of the existence of God: according to Descartes, the very psychological fact that we have an *idea* of God, as of an infinitely perfect being, the fact, that is, that "God" is a meaningful term, proves the existence of God, as the objective referent of that idea; for (thus Descartes argues in the *Meditations*) such an idea could be derived neither from introspection nor from external perception of finite objects. But if his argument were to be valid, he would have to prove that not even the constituents of the complex idea of God could be derived from introspection or external preception; since obviously ostensively definable simple ideas may be compounded into a complex idea which itself does not correspond to anything that exists.

Granted, then, that even if no waking moments existed, and no physical realities existed, "waking" and "physical reality" could still have *connotative* meaning, being verbally defined. But since most people understand such terms without being able to define them verbally, it is clear that they have, in common usage, *denotative* meaning; and denotative meaning, in contradistinction to connotative meaning, of terms proves the existential applicability of those terms. In fact, whenever a term already in use is verbally defined, the definition, provided it is intended to fit the antecedent usage of the term, is the outcome of an inductive inquiry into the common features of instances to which the defined term is commonly applied.[1] Thus, if the species of whales is defined in terms of the genus of mammals and some differentia which renders the defining concept co-extensive with the defined concept (I do not, at the moment, know the differentia, but anyone better versed in zoology than myself may supply it for himself), this verbal definition is surely the result of an inductive investigation into the common features of the original *denotata* of the term "whale". Again, the inductive

[1] Within formal (mathematical) discourse, of course, concepts may be definitionally constructed without any regard to existential applicability. Thus, non-Euclidean metrical concepts were constructed long before it was discovered that such concepts have empirical application in astrophysics.

character of the establishment of a "real" definition of a term in common use, is brought out lucidly in Socratic dialogues. In the *Meno*, for example, Meno is supposed to discover the nature of virtue, that is the connotation of the term "virtue". Ignorant of the nature of definition, he first adduces *instances* of virtue, such as temperance, justice, etc. How is the *generic* character of virtue finally elicited? By discovering the common features of these modes of behaviour, the presence of which explains and justifies the application of the same term "virtue" to all of them. This establishment of a "real" definition, however, involves the generalization that the defined term has the same meaning in all those usages which have not been examined. As a matter of fact, the way in which such a verbal definition is proved inadequate, is quite analogous to the exhibition of an *instantia contraria* to an inductive generalization: one points to a common usage of the defined term, which the proposed definition does not fit, and concludes that people using that term do not always have in mind what according to the definition they should have in mind.

What this digressive reflection upon the nature of verbal definitions of terms in use [1] is intended to convey is, that in common discourse denotative meaning is as a rule genetically prior to connotative meaning. Thus the first and rudimentary method by which the meaning of words is usually explained to children, is the method of ostensive definition. The intelligibility of abstract verbal definitions, exhibiting the *con*notation of a word, presupposes some intellectual maturity not possessed by infants. Hence, even if a term 'P', current in common discourse, admits, unlike terms like "red", "pleasant", etc., of a verbal definition, we may be pretty sure that a person who denies the existential statement "there is an x, such that x is P", is not using "P" in the way it is commonly used. Thus, if a physicist, on the basis of the electronic theory of matter, should maintain that no "really" solid objects exist and that it is only ignorance of the nature of matter which can free a man from the fear of falling through when stepping over an apparently solid threshold, he cannot be using the word "solid" in the way it is commonly used; for whatever the technical verbal definition

[1] Verbal definitions of terms already endowed with denotation are to be distinguished from verbal definitions that involve no cognition, but amount merely to the introduction into the vocabulary of a simpler synonym for a more complex symbol, such as the following definitions: "spinster $=_{df}$ unmarried female above a certain age" (in the absence of a specification of the age limit, "spinster" is, of course, a vague term), "$i =_{df} \sqrt{-1}$."

of solidity in terms of attractive and repulsive electric forces may be, the word " solid " first acquired a meaning by being applied to objects having the perceivable quality of hardness.

Let me finally illustrate my point in terms of the existential statement which is the very thesis under discussion, *viz.* the statement " there are indubitable or certain existential statements ". As I pointed out at the beginning of this paper, in many philosophical circles the view is almost axiomatically accepted that there are no certain empirical statements ; which view entails, of course, that existential statements of the sort here discussed, being a species of empirical statements, are never certain. Now, I suspect that the statement " there are no certain empirical statements " is true only in so far as it is analytic ; and it will be analytic, if " certain " is used as a synonym for " analytic ", and the classes of analytic statements and of empirical statements are defined as mutually exclusive. Obviously, thus interpreted, the thesis that there are no certain empirical statements is so trivial that it can hardly be believed that *this* is what its defenders intended to assert. But if " certain " does not have the meaning of " analytic ", *i.e.* if a " certain statement " does not mean " statement whose denial expresses a logically impossible state of affairs," then, it seems to me, the statement " there are certain empirical statements " is indubitable in the sense of being true by ostensive definition. That is, if pressed to explain what one means by " certainty ", as applied to empirical statements, one will naturally mention some empirical statement, such as " there are tables in this room ", which one regards as indubitable. If a defender of " fallibilism " should deny the certainty of the statement " there are tables in this room ", he could not be using the word " certain " in the way it is commonly used in such contexts, but would be using it in some such esoteric sense as " analytic ".

This point has been made so clearly and tellingly by Mr. Malcolm, in his article " Certainty and Empirical Statements " (MIND, LI, 1942, New Series), that nothing more need be said about it here. It may not be irrelevant, however, to criticize briefly the following argument (to be found in C. I. Lewis' *Mind and the World Order*) in favour of the view that all empirical statements are " mere hypotheses " and thus intrinsically dubitable. The " meaning " of a statement, it is said, is the totality of its *consequences ;* but since the properties of the instances of an empirical concept (such as the concept " being copper ") are infinitely numerous, a statement mentioning an empirical concept has an infinite number of consequences and hence can never

be *completely verified;* the possibility always remains that some one of its consequences may be falsified by experience. This argument is delusive on account of the ambiguity of the term "consequence": q may be a consequence of p in the sense of being *logically* entailed by p or in the sense of being *causally* entailed by p. Thus different consequence-relations are being confused: no account is taken of the distinction (to use Carnap's terminology) between L-consequence ("consequence" defined by L-rules, *i.e.* logical principles) and P-consequence ("consequence" defined by P-rules, *i.e.* physical—or, more generally speaking, empirical—laws). For example, if a "penny" is defined as being made of a certain metal, and having a definite kind of imprint on each side, the statements that this penny has these properties will be L-consequences of "this is a penny", and obviously nothing will be a penny which does not have these properties. But the advocates of "fallibilism" seem to maintain that unless I have verified, for example, that this object presents an elliptical shape (of definite eccentricity) when looked at from one angle of vision and a different elliptical shape when looked at from a different angle of vision, my evidence for this being a penny is not completely conclusive. This argument completely overlooks that the very point of defining an empirical concept in terms of a finite number of properties is to circumscribe what is *conclusive* evidence for the validity of an application of that concept. As the phrase "conclusive evidence" is commonly and properly used, it is indubitable that there are empirical statements for which we have conclusive evidence; to deny this is to assign such a meaning to the phrase "conclusive evidence" that only an *infinite* amount of evidence can be said to be conclusive. But obviously nobody in his senses would maintain that you have no conclusive evidence for believing this to be a penny, before you have perceived all the various shapes of its upper surface which, by the laws of perspective, are correlated with various angles of vision.

In conclusion, it may be emphasized that, just as the analyticity of a statement is relative to a given universe of discourse with given *syntactical* rules (transformation-rules and verbal definitions), so whether a given existential statement is indubitable in the sense of being true by ostensive definition depends on the primitiveness or definability of its predicate in a given universe of discourse. If P is a significant but unanalyzed (verbally undefined) concept, the truth of the statement "there is an x such that x is P" follows from the fact that this statement is significant, and requires no empirical test. Yet, P need not be

intrinsically unanalyzable; and once it becomes analyzed and verbally defined, the above statement ceases to be indubitable. For the meaning of 'P' could then be communicated by linguistic means alone, and the significance of the above existential statement would not depend any more on the existence of objects to which P applies. I thought it wise to add this remark, lest it be thought that a belief in the existence of indubitable existential statements of the kind described in some way involves the questionable assumption of the existence of intrinsically unanalyzable concepts.

V.—DISCUSSIONS.

THE POSITIVISTIC USE OF "NONSENSE".

In a recent paper in MIND [1] I developed a theory about the *nature* of the philosophical view that there are such objects as universals, which makes it out to be completely different from what it appears to be. The dispute over the philosophical view, which also includes the positivistic claim that the statement "There are such entities as universals" is literally nonsensical, was given an explanation, according to which it is not the factual disagreement it gives one the impression of being. Owing to an oversight, however, only the traditional part of the controversy was discussed, *i.e.*, the controversy between those who deny and those who assert the existence of universals; there was no discussion of the positivisitic contention. This omission it is my present purpose to rectify.

According to the theory arrived at in the paper, the words "There are such entities as universals", though they create the semantical illusion [2] of stating the existence of objects, described by philosophers as being less coarse and more exact than the familiar objects of sense-experience, come to no more than does the statement "Abstract words are proper names". This statement is to be understood as describing an unorthodox classification of abstract words, made by people who know perfectly well that they are not proper names. Hence it is not to be taken as saying what is false, but as stating an alternative arrangement to the usual one of some parts of speech. Academically, and probably for psychological reasons, it is a re-classification which many philosophers prefer, with the established one recognized as doing the work of ordinary discourse perfectly well. The traditional dispute over the existence of universals thus turns out not to be factual, and what makes it irresolvable is not that not all the facts relevant to establishing once and for all either side of the dispute are known. The irresolvability is constituted by a difference in preference, and is comparable to the irresolvability of an æsthetic disagreement over a work of art. Some philosophers find the established classification satisfactory, and resist any innovation, even though it is meant for contemplation rather than for practical use. Still others make up a different arrangement of their own. Thus, Prof. Stout, who holds that characters are particular, reclassifies adjectives with general names, for instance, "tawny" with "lion", and resists the further classification of both with proper names.

[1] "The Existence of Universals", January, 1946.

[2] I owe this expression to Prof. Herbert Davis.

Many, if not all, positivists, contend that the view that there are universals, as well as the traditional disagreement with regard to it, is without any literal significance whatever. This claim, which extends to all of metaphysics, starts a new dispute in philosophy: one in which traditional philosophers insist that the sentence "There are universals" is perfectly intelligible to them and that it does express something about which they can intelligibly disagree, while positivists hold that the sentence is really unintelligible and that the controversy with regard to what, supposedly, it expresses is nonsensical, though conducted in all seriousness. According to positivists philosophers have been "duped by grammar" into "the more inglorious kind of metaphysics which comes from a failure to understand the workings of our language".[1] In turn, traditional philosophers fear the "threatened catastrophe"[2] of "the sombre conception of metaphysics which they have espoused".[3]

The question thus comes up whether this new dispute is constituted by a straightforward difference of opinion about the *fact* with regard to "There are universals", whether it is nonsensical or not. On the theory I have constructed about the view regarding universals two possibilities are open to me. I can hold that positivists have simply made a mistake, or I can hold that their view has an explanation similar in general respects to that of the traditional belief in universals. The first alternative lends itself more naturally to acceptance; but the second, nevertheless, seems to me to be the correct one. In any case it is the more interesting possibility to pursue; and it is interesting on its own account to see what evidence can be brought forward in its favour.

Mr. Ayer undoubtedly *thinks* that the positivistic assertion states a fact. He even goes to the length of trying to show "how easy it is to write sentences which are literally nonsensical without seeing that they are nonsensical",[4] in order to defend himself against the charge that his view involves "incredible assumptions about the psychology of philosophers".[4] It seems to me, if we take the positivistic assertion as a factual linguistic statement which uses "nonsense" in the way in which philosophers, both positivistic and traditional, appear to think it is being used, we must suppose that an incredible assumption about the psychology of philosophers *is* being made. One needs only consider the duration of metaphysical problems and by what subtle reasoning philosophers have been led to their views, to realise how entirely incredible the assumption really is. Nonsense does not have such a remarkable career. And it seems to me that the reason positivists do not feel that the assumption is incredible is that they are not really making it. It seems to

[1] A. J. Ayer, *Language Truth and Logic*, p. 39.
[2] E. A. Burtt, "What is Metaphysics?", *The Philosophical Review*, Nov., 1945, p. 533.
[3] *Ibid.*, p. 557.
[4] *Language, Truth and Logic*, p. 36.

me the assertion that the philosophical view about universals is nonsensical says something quite different from what it appears to be saying. Their use of language, which successfully conceals even from the positivists what they are doing, produces a semantical illusion similar to that produced by the traditional dispute. I propose to argue that the reasons they give for concluding that the view is nonsense constitute *true* statements about the view, but the "conclusion" that it is nonsense is not a *conclusion*, it is something quite different.

Mr. Ayer writes:

> "It should be mentioned here that the fact that the utterances of the metaphysician are nonsensical does not follow simply from the fact that they are devoid of factual content. It follows from that fact, together with the fact that they are not *a priori* propositions . . . we may accordingly define a metaphysical sentence as a sentence which purports to express a genuine proposition, but does, in fact, express neither a tautology nor an empirical hypothesis. And as tautologies and empirical hypotheses form the entire class of significant propositions, we are justified in concluding that all metaphysical assertions are nonsensical".[1]

This says two things about metaphysical sentences in general, both of which are true of "There are such entities as universals". For one thing, it says that the sentence fails to express an empirical proposition about the existence of objects of a certain kind. It must be admitted, of course, that the form of expression philosophers have used, from Plato on and including those who have disagreed with the view, leads one quite naturally to think that the existence of objects of some sort is being stated, for which "a special non-empirical world is invoked to house them".[2] But this is only a deceptive feature of their choice of language. Unlike "Ghosts exist", "There are such entities as universals" expresses no empirical proposition about entities. To agree with positivists on this point it is not necessary to adopt their special philosophical view about the nature of contingent propositions, the view, namely, that it is of their "very nature"[3] to be hypotheses.

For another thing, the sentence does not express an *a priori* proposition. What we know in knowing an *a priori* proposition, *e.g.*, the proposition that every effect has a cause, are facts about the established ways in which words are used in a language. Unlike what we should know if we knew that every event had a cause, namely, a fact about nature, what we know in knowing that every effect has a cause are the linguistic facts that "effect" and "cause" are so used that application of the word "effect" to an event which would not be described as having a cause would be withheld. In other words, what we know is the linguistic fact that "uncaused

[1] *Language, Truth and Logic*, pp. 31-32. [2] *Ibid.*, p. 35.

[3] *Ibid.*, p. 23.

effect" has no use, that it describes nothing, either actual or imaginable. And when, in place of "logically impossible", philosophers use "logically inconceivable", as for example in "It is logically inconceivable for any thing to be an effect which has no cause", it is not to be imagined that "effect which has no cause" describes a state of affairs which, owing to some psychological limitation, we are unable to conceive; what prevents us from conceiving an uncaused effect is the linguistic fact that "uncaused effect" is a senseless expression. The sentence "Every effect has a cause", or its equivalent "It is logically impossible for anything to be an effect and not have a cause", is *made* to express a necessary proposition by the fact that nothing is *called* an "effect" to which the description "has a cause" does not apply. But this is not to say that the sentence "Every effect has a cause" *expresses* this fact, or, in general, that *a priori* propositions are verbal.

In this connexion Ayer has written: "Thus, if I say 'Nothing can be coloured in different ways at the same time with respect to the same part of itself' I am not saying anything about the properties of any actual thing; but I am not talking nonsense. I am expressing an analytic proposition, which records our determination to call a colour expanse which differs in quality from a neighbouring colour expanse a different part of a given thing. In other words, I am simply calling attention to the implication of a certain linguistic usage."[1] Ayer has remarked an important similarity between *a priori* and empirical linguistic propositions, between, for example, "Nothing can be blue all over and also orange" and "It makes no sense to say 'x is blue all over and also orange'". The feature they have in common is that what we know in each case are facts about word usage. This led him to assimilate *a priori* with empirical linguistic propositions. Apparently positivists have been so impressed by this feature of similarity that in order to emphasize it they felt themselves justified in *stretching* the word "verbal" to cover *a priori* propositions.

But this exaggerates a similarity at the expense of a formal difference, the difference between "*a priori*" and "empirical", which impresses other philosophers. They in turn proceed to discover a contradiction in the view that *a priori* propositions are verbal: "*p* is a verbal proposition" implies that *p* is empirical, hence the view that *a priori* propositions are verbal entails the contradictory consequence that *a priori* propositions are empirical. It will be obvious that philosophers who argue in this way wish to emphasize not the similarity, but the difference between *a priori* and ordinary linguistic propositions. This they succeed in doing, as their argument shows, by regulating the use of "verbal" by reference to the feature of dissimilarity between the sentences for the two sorts of propositions, *i.e.*, by reference to the fact that, unlike sentences for ordinary

[1] *Language, Truth and Logic*, p. 104.

linguistic propositions, sentences for *a priori* propositions *do not express* facts about the ways words are used.[1] Thus, although what we know in knowing that nothing can be blue all over and also orange is that "being blue all over and also orange" has no descriptive use, the sentence, "Nothing can be blue all over and also orange" nevertheless does not *express* this linguistic fact. In short if, with positivists, we are impressed by one feature of *a priori* propositions we shall be inclined to call them "verbal", and if, with other philosophers, we are impressed by the other feature we shall be inclined to deny them that designation. But regardless of the view we adopt both features are actual features of *a priori* propositions.

It will be clear now that the view that there are such entities as universals, taken as non-empirical, is nevertheless not *a priori*. In order for "There are such entities as universals" to express an *a priori* proposition, "Abstract words are proper names" would have to express a true empirical one. The first sentence would then be *made* to express a necessary proposition by the fact that abstract words were as a matter of established practice called "proper names"; and what we should know in knowing that universals exist is that abstract words are grammatically classified as proper names. The facts of the case, with which philosophers who hold the view are not at all concerned, are, however, other than what is required to make the view *a priori*.

"Universals exist" expresses neither an *a priori* nor an empirical proposition. And since it "purports to express a genuine proposition", *i.e.*, since, for one thing, it is a sentence in the indicative, it is, according to Ayer's definition of "metaphysical", a metaphysical sentence. Therefore it is a nonsensical utterance. But how is "nonsense" being used? It looks as though the word has its ordinary connotation, such that to say a metaphysical sentence is nonsensical is to say it is an unintelligible combination of words. It looks as if Ayer has arrived at the *conclusion* that the sentence with regard to universals is literally unintelligible as a result of having discovered certain facts about it. And when traditional philosophers disagree with positivists, it looks as if the disagreement is over the question whether in fact sentences, which all philosophers would agree state metaphysical views, are unintelligible or not. Ayer argues that because they express neither *a priori* nor empirical propositions he is "justified" in concluding that they are without sense. Other philosophers, for whatever reasons they may give, disagree with this.

Let us look more closely at what Ayer has done. He defines a metaphysical sentence as one which purports to express a genuine proposition, but which actually expresses neither an empirical nor

[1] The following paraphrase of the argument helps make this point clear: If an expression for an *a priori* proposition expressed linguistic facts (*i.e.*, the facts we know in knowing the *a priori* proposition) the *a priori* proposition would be empirical.

a necessary one; and from the fact that necessary and empirical propositions constitute the sum total of "significant propositions" he feels justified in concluding that metaphysical sentences are nonsensical. It will have been noticed that in his demonstration he uses the *new* expression "significant proposition" (as well as "genuine proposition", apparently used synonymously with it), which he nowhere thinks it necessary to explain.[1] We may gather, therefore, that when he says that "tautologies and empirical hypotheses form the entire class of significant propositions", he is *defining* "significant proposition", and its equivalent, "genuine proposition". By this definition it means the same as "tautologous or empirical proposition". This explains why, with complete assurance and without the uncertainty induced by the suspicion that perhaps he has overlooked some propositions, he was able to assert that "tautologies and empirical hypotheses form the *entire* class of significant propositions". The demonstration thus proceeds directly from the fact that metaphysical utterances express no significant propositions (in the defined sense) to the conclusion he thinks that fact justifies him in drawing, namely, that they are nonsensical. But what does the conclusion tell us about metaphysical utterances in addition to what we already know about them from knowing the facts which are used to justify the conclusion?

It seems quite plain to me, in the first place, that Ayer is not making an empirical inference. It is not that from the fact that metaphysical sentences express neither *a priori* nor empirical propositions he concludes it to be *very likely*, or even certain, that they are nonsensical, in the usual sense of "linguistic nonsense". He gives the impression that perhaps he is doing this when he writes: "Of course it is possible that the author of such a remark ["The Absolute enters into, but is itself incapable of, evolution and progress"] is using English words in a way in which they are not commonly used by English-speaking people, and that he does, in fact, intend to assert something which could be empirically verified. But until he makes us understand how the proposition he wishes to express would be verified, he fails to communicate anything to us."[2] This remark, together with the view he actually does hold about metaphysics, would lead one to think he was, perhaps, a stranger to a special language spoken with mutual understanding by others and that he concluded the language made no sense because he failed to

[1] Ayer does not use "proposition" and "indicative sentence" synonymously, so that "significant proposition" does not translate into the known expression "significant sentence". See *Language, Truth and Logic*, p. 121; also his *Foundations of Empirical Knowledge*, pp. 93-102, especially p. 102, where he writes: "In general, we use the word 'proposition' rather than 'sentence' whenever we are concerned, not with the precise form of an expression, or with the fact that it belongs to a particular language, but with its meaning."

[2] *Language, Truth and Logic*, p. 22.

understand anything said in it. Ayer's acquaintance with metaphysics prevents us, however, from thinking that he is in the situation of a person who knew just enough arithmetic to know that "$\sqrt{2}$" represented neither an integer nor a rational fraction and went on to make the mistaken empirical inference that it was senseless.

We should be closer to what he is saying if we supposed the conclusion to be *entailed* by what he states with regard to metaphysical utterances. And if we suppose this we should have to think that to say "S is an indicative sentence which expresses neither an *a priori* nor an empirical proposition but S is not nonsensical" is to say something self-contradictory. But there is no ordinary use of "nonsense" in English which makes the statement self-contradictory. If we look upon what Ayer has said as constituting a logical demonstration of the positivistic view we shall have to conclude that he mistakenly attributed a meaning to "nonsense" which it does not have, and that the demonstration is invalid because it is based on this mistake. The author of an elementary book on mathematics wrote: "Mathematics is not simple in the sense of being non-mathematical", from which it follows that not even the easiest parts of mathematics are simple, even to God. And if the positivistic argument that because metaphysical sentences express neither *a priori* nor empirical propositions they are nonsensical is viewed as a logical demonstration, they may, without serious distortion of their position, be regarded as thinking that metaphysical utterances are nonsensical *in the sense* that they are indicative sentences which express neither *a priori* nor empirical propositions. But there is no such sense in English of "nonsense", just as there is no sense of "simple" according to which "simple" means "non-mathematical".

It is difficult for me, however, to believe that Ayer and other philosophers have made the mistake of thinking that "nonsense" has a meaning which in fact it does not have in English. It is not too much to expect, if they did make a mistake of this sort, that they would have corrected it by now, especially in view of the fact that so many philosophers have protested against their view. Nor is it easy to see, supposing this is their mistake, why other philosophers have not in so many words pointed it out to them. In the case of the writer on mathematics we should not be inclined to say that he committed the error of attributing to "simple" a meaning it does not have in English usage. We should rather be inclined to say he *gave* it that meaning. And in the case of the positivistic use of "nonsense", it seems to me that the same thing has happened, *i.e.*, that positivists have given a new use to "nonsense". It seems to me more likely that a number of philosophers have unconsciously agreed upon a new use of the word than that they have made a mistake in common.

It will be recalled that in his demonstration "significant proposition" was introduced via a concealed definition, and it seems

to me to be not at all unplausible to suppose that he repeats this procedure, or something like it, with the word "nonsense". On this assumption, his "demonstration" turns out to be both an explanation of and the justification for a new use of "nonsense", which, because it is stated in the form of a demonstration, effectively conceals what is being done, from himself as well as from others. His "conclusion", then, turns out to be a linguistic innovation. It introduces us to the positivistic use of "nonsense", according to which "nonsensical indicative sentence" means the same as "indicative sentence which expresses neither an *a priori* nor an empirical proposition". And when in his demonstration he states that "we are justified in concluding . . .", he is "justifying" an extension of the application of "nonsense" to metaphysical statements. The fact that a given indicative sentence expresses neither an *a priori* nor an empirical proposition is a necessary condition for saying that the sentence is nonsense, and Ayer wishes to make it also a sufficient condition. He wishes to make "expressing no significant proposition" the sole criterion for the application of "nonsensical" to indicative sentences. And from his otherwise logically unnecessary introduction into his demonstration of the expression "significant proposition" (which carries with it the connotation of importance), we may gather what he considers to be a justification for the new use of "nonsense". There is an important similarity between, *e.g.*,

"7 is a more nearly circular number than 2".

"There are such entities as universals".

The first expresses no proposition whatever; it says nothing at all and is nonsensical. The second expresses neither an empirical nor a necessary, *i.e.*, no *significant*, proposition. The difference between the two sorts of sentences Ayer apparently counts as being so insignificant, or unimportant, as to feel justified in bringing out their similarity, which he does by changing the meaning of "nonsensical" so as to make it applicable to both.

If, now, after having decided to call them both "nonsense", the difference between them impresses itself upon the attention of a philosopher, he may proceed to mark the difference by calling one "important nonsense".[1] In a slightly different connexion some positivists, against the protest of others, have actually done this sort of thing: " . . . If we adopt conclusive verifiability as our criterion of significance, we are logically obliged to treat these general propositions of law [*e.g.*, "arsenic is poisonous" and "a body tends to expand when it is heated"] in the same fashion as we treat the statements of the metaphysician. In face of this difficulty, some positivists have adopted the heroic course of saying that these general propositions are indeed pieces of nonsense, albeit an essentially important type of nonsense. But here the introduction of

[1] It is enlightening to note that some positivists have spoken of metaphysics as a kind of poetry.

the term 'important' is simply an attempt to hedge".[1] Ayer instead proposes to be more "liberal"[2] with expressions for general propositions; he thinks they "should be allowed"[3] the designation "factually significant".[3] We may very well be curious about what kind of liberality and what kind of allowing these are. It does not require much imagination to see what they come to: that, in the case of expressions for general propositions, he is being *liberal* with the application of "factually significant". And it is hardly any strain on the imagination to realize that he prefers not to be so liberal in the case of metaphysical sentences.

The philosophical view that metaphysics consists of statements that are devoid of sense is not the view it gives one the impression of being. It only states the fact that metaphysical sentences do not express either empirical or necessary propositions. But at the same time it uses a familiar word in a new way, so that it looks to be saying one thing, while it actually says something else. It is this new, and as yet not established, use of "nonsense" that is in dispute. Some philosophers wish to *call* metaphysical utterances "nonsensical", and they attain their end by covertly redefining the word, without being explicitly aware of what they are doing. The *sting* in what they say about metaphysics is in the selection of the word upon which they bestow their special meaning. Undoubtedly their choice of the word "nonsense" indicates an attitude of disapproval of anyone doing metaphysics: behind the linguistic screen we can detect the emotional evaluation, "Metaphysics is trivial and absurd". We can glimpse the same thing behind the definition of "*significant* proposition". And when other philosophers protest that metaphysics is not nonsense, they are protesting against both the evaluation and the philosophical use of "nonsense".

MORRIS LAZEROWITZ.

[1] *Language, Truth and Logic*, pp. 23-24. [2] *Ibid.*, p. 26.
[3] *Ibid.*, pp. 24-25.

A DEFENCE OF ARISTOTLE'S LOGIC.

LORD RUSSELL'S admirably conceived and stimulating new book, *A History of Western Philosophy*, contains an attack on Aristotle's logic. Lord Russell has never concealed his poor opinion of this kind of logic and its influence on philosophical thought, but his views are now more fully expressed. I propose to defend Aristotle as best I can, and as part of the strategy of defence to attack certain aspects of Lord Russell's logic, or, rather, certain inferences he draws from it.

The historian of philosophy should endeavour to discern first of all what it was that philosophers set out to do, in terms of the knowledge at their disposal and the presuppositions of their age and circumstances. This may be a counsel of perfection, and is certainly very hard to do for ancient philosophers. Yet it is absurd to condemn Plato or Aristotle because he lacked information we now possess; it is an error to interpret his words in terms of our presuppositions, not his; it is at least rash to assume that where his presuppositions differ from ours, we must be right and he must be wrong. It may be that the two sets of presuppositions are just different; it is even possible that his are right and ours wrong. Fortunately these historical difficulties are at a minimum while attention is fixed on logic. Undoubtedly Aristotle's logic was influenced by his general philosophical outlook and by the general intellectual atmosphere of his day, more especially by prevailing theories of mathematics. But logic is an abstract, specialized subject with a restricted aim. Thus it is possible for a writer of the present day, in the light of present day knowledge and problems, and fully cognisant of current criticisms, to expound a strictly Aristotelian logic. I refer to W. E. Johnson's *Logic*. True, it is a development not just an imitation, but a development on the basis of the original. While I am defending Aristotle against Lord Russell I ask the reader to bear in mind that any important and valid criticism of Aristotle should demolish Johnson equally.

It will be helpful, to begin with, to state baldly what I believe logic to be. I hope my view is not just *a priori* dogmatism and is arrived at empirically by considering what has been done by Aristotle, which he called logic, and by Lord Russell, which he also calls logic. According to my reading, they have introduced certain technical devices intended to eliminate certain types of false reasoning and erroneous statement, certain ambiguities and confusions. The technical devices consist of special linguistic forms. If any assertion

is translated out of ordinary language into these forms, then some errors, confusions, etc., liable to be concealed by ordinary forms, are made manifest. The technique is a help towards distinguishing valid from invalid assertions and inferences. They might be distinguished without it, but not so easily. A technical device which is designed and used for one purpose is not necessarily any use for any other; so that there is no cause for surprise if Aristotle's logic can do one set of things, Lord Russell's another, and neither can do everything. Granted that logic is a linguistic device, it does not follow that it is so purely linguistic as Lord Russell, and many others, say. It may deal with fact as well as with language.

What does Aristotle's logic set out to do? (1) By translating any assertions into the Subject-Predicate form one can set out a number of valid and invalid transformations, and the relations of implication, incompatibility and independence between the different types. Given that some of Farmer Brown's cows are in his meadow, I can infer 'None of them are in his meadow' is false, 'Some are not in his meadow' may be either true or false. This provides a check on common fallacies promulgated by making assertions in forms which do not show these relations clearly. This is a useful dodge; it is ignored by Lord Russell and the logical forms he uses do not appear to do this particular piece of work. (2) As the S-P form expresses relations of class inclusion and exclusion it provides a framework for classification by genus and difference. Again, this is a useful device ignored by Lord Russell. Of course, the forms he uses can do the same thing but no better. These two functions are ignored because, thanks to Aristotle (or perhaps one ought to say Plato's Academy), they are too familiar to be visible. (3) The rest of Aristotle's logic is the Syllogism; the method of deductive inference through a middle term. The syllogism can be taken and is perhaps best taken as a calculus of class inclusion and exclusion. Other types of transitive relation can be treated as special cases of inclusion and exclusion. The syllogism in *Barbara* is commonly taken as the subsumption of a special type or a particular instance under a general rule. Lord Russell does not deny the validity of the syllogism but says it is unimportant (p. 202) that there are non-syllogistic forms of deduction (p. 198), and that Aristotle did not pay enough attention to inductive reasoning (p. 199).

As to the first accusation, if the syllogism is unimportant all logic is unimportant. To be able to put deductive arguments (if only a few of them) into a form that distinguishes valid from invalid types is to do what logic sets out to do. As to the second, Lord Russell says that Aristotle says that the syllogism is the only form of deductive reasoning, and that this is false. He confesses, however, that some apparently non-syllogistic arguments can be turned into syllogistic form, but he deprecates such treatment as being useless cruelty to arguments. He then quotes an arithmetical instance which really looks rather syllogistic (p. 198). Still, on the face of

it, all deduction does not appear to be syllogistic. Argument by *reductio ad absurdum* does not look syllogistic; it does not appear to proceed through a middle term; how does it proceed? If Lord Russell knows about other forms of deductive inference, why does he not do for them what Aristotle did for the syllogism—set out the valid and invalid forms? Or is it a secret too deadly to reveal, like the use of atomic energy?

The third accusation is manifestly a case of hitting below the belt. If logic is as purely linguistic as Lord Russell says, inductive inference is no concern of logic at all. In any case, Lord Russell confesses that he can make little of it (pp. 673-674); so he should have more sympathy for Aristotle.

The most serious charge brought against Aristotle is that he confuses existential and non-existential propositions by treating 'Socrates is mortal' as of the same form as 'All men are mortal'. The difference is that the first cannot be significant unless there is a man called Socrates, the second can be significant even if there are no men. Now Lord Russell cannot have it both ways. If logic is purely linguistic, it knows nothing of existence and Aristotle has done no wrong. If Aristotle is wrong then logic deals with fact as well as language. I should prefer the second alternative. It seems to me that questions of fact and language are mostly inseparable. Most discussions that are not trivial deal with both. Syntactic blunders are factual blunders. Whenever the question of existence or non-existence arises (as in "There is a so and so" or "There are so and so's"), the question is not purely linguistic. Granted then that Aristotle has erred, I should argue that the error is only a little one. Aristotle (I would suggest) lumps together "Socrates is mortal" and "All men are mortal" as a technical simplification because for his purpose the distinction between existential and non-existential is not required. One form is better than two if one suffices, as Lord Russell's favourite, Occam's *Razor*, tells us. By treating the individual Socrates as though an *infima species* the trick is done. The trick gave some of the mediæval philosophers a headache, but otherwise has done little harm. Though it is a trick, it is not entirely vicious because Socrates *qua* bundle of universals is a species, the most *determinate determinable*, although *qua* temporal route of events he is not a species. The treatment of "Some men are mortal" as if of the same form as "All men are mortal" can be defended simply by defining the form "Some S are P" as the converse of "All P are S". This trick is perhaps rather harder to justify in principle, but it does even less harm than the other.

Of course, anybody who is determined to draw an existential conclusion from non-existential premises will not be stopped by the syllogism in its traditional form. No rule is proof against a really energetic fool. The conclusion I would put forward is that this lack of distinction between the existential and non-existential proposition is a small blemish in the Aristotelian logic, but one that leads to no

difficulties once it is pointed out. But, granted it is a blemish, then the contention that logic is purely linguistic goes by the board.

Undoubtedly there are logical questions which are purely linguistic. A notable instance is one of Lord Russell's own contributions, the theory of logical types. The sentence, 'All assertions made in English are false', apparently fails to say anything. Translate the sentence into French and then it says something; it is capable of being true or false. This shows that the failure to say anything in English is purely linguistic. A linguistic disease requires a linguistic cure, and this Lord Russell has provided. Unfortunately his theory has led some writers to produce nightmare speculations about 'Meta-languages', on the hypothesis that language cannot discuss or criticise itself. On the contrary, that is what the careful use of language is always doing. Discussion properly carried out is simultaneously clarification of fact and of language. There is only one *genus* language, of which English, French, Chinese are *species* according to one rule of subdivision. Arithmetic is a species according to another rule of subdivision, and Lord Russell's types are species according to still another rule. It is no harder to discuss English usage in English than in French. It is difficult (I suppose) to discuss arithmetical symbolism by means of arithmetical symbols; perhaps impossible. Whether or not a species of language can discuss itself depends on the rule for subdivision into species. Now if Type I language be defined as any species of language which cannot discuss itself, then Type II is that which can discuss Type I and (for the most part) itself also. It will be all ordinary, critically considered linguistic usage. Type III is only required to cover exceptional cases by introducing qualifications when unqualified statements cause confusion. If there is no need to postulate Type I as defined, two types may be sufficient. If, then, this theory of types is part of logic (not of grammar), this part is purely linguistic. The theory is not just verbalism, and is undoubtedly useful because it rules out some too easy refutations that have been current; for instance, that the sceptic cannot assert his own ignorance.

If it is assumed that the operational terms 'and', 'or', 'not', 'not both', 'if-then', 'any', 'all' have no denotation (as is by no means obvious), and if they can be discussed without introducing openly or surreptitiously anything more empirical (as is not obvious either), and if this discussion is part of logic, then this part also may be purely linguistic. I should not venture to deny that Lord Russell may have done something of the kind in an esoteric work, *Principia Mathematica;* that arithmetic may be, as he says, purely linguistic, and that this kind of logic may be the generic form of which arithmetic is a specialised development. But this has very little to do with what Lord Russell says when he explains his logic in his exoteric works, with what Aristotle does, or with the faults Lord Russell finds in Aristotle.

If anybody claims that his own kind of logic is purely linguistic it is hard not to believe him. In a fashion language means whatever the user intends it to mean. Consequently it would be very rash to say that there can be no such thing as purely linguistic logic. Having admitted so much on the one side, it is necessary to add on the other side that the framers and users of traditional logic, if they considered the matter at all, would almost certainly conclude that logic is both linguistic and factual. As that is what they meant it to be, either that is what it is or they failed most lamentably to make themselves understood.

Wherever we are using terms with definite denotation, linguistic confusions are also factual confusions. If you are not clear about the usage of the terms 'adder' and 'grass snake' it is safer not to pick up a snake; when you are clear you can pick one up with impunity. But logic, it will be said, does not use such terms except incidentally for purposes of illustration; it deals with forms like 'All S is P' or '*p* implies *q*'. It does; but it also uses the terms 'true', 'false', 'exists', 'there is a so and so'. Now, to say that *something* exists or that *something* is true is to say nothing. We cannot say *that* a thing exists apart from pointing to *what* exists or *that* an assertion is true apart from *what* the assertion is about. Unless this kind of factual reference can be eliminated from logical discussion logic will remain factual as well as linguistic—though factual in a vague general way that is easily overlooked. Lord Russell, in his discussion on page 831 about the assertions "Scott exists" and "The author of *Waverley* exists" is using 'Scott', 'author' and '*Waverley*' in a purely illustrative way. He could have used other terms, but some definite terms pointing to things of a definite sort he must use or he would not say anything. The difference between the logical kind of discussion and other discussion is that the logical kind is general so that *any* appropriate term will do as well as any other. It is only to this small extent that logical discussion of linguistic usage differs from zoological discussion about the nomenclature of English snakes.

It may be maintained that the logician or pure mathematician is free to invent anything he likes for himself subject only to the limitation of self-consistency—all his assertions must be mutually compatible. Without this limitation he would not say anything. Nevertheless, why the limitation? It is not in the least linguistic. The distinction between saying something and failing to do so does not lie within the confines of language, but in the relation between language and that which language refers to. It is, in part at least, empirical. Only existence and non-existence are strictly incompatible *a priori*, as Hume points out. For the rest, we discover by experience that some things agree, combine or cohere with one another and some do not. A thing, we find, may be both cold and black, but not both black and white, in the same place, at the same time, in the same respect. (Grey is, of course, neither black nor

white). The same may be said of hot and cold, *mutatis mutandis*. From observations like this arises the distinction on which is based the notion of compatibility and incompatibility, consistency and inconsistency, coherence and incoherence. They begin (historically) as empirical generalisations, and are later raised to the level of universal axioms. Then they may be taken as *a priori* because they are seen to be heuristic principles. If we conduct our discourse so as to make these distinctions primary, then we get on with our enquiries; otherwise not. Concurrently language develops devices to exhibit coherence and incoherence among matters of fact. Finally, it becomes possible for simple-minded philosophers to call such truths conventional or purely linguistic.

That coherences or incoherences in nature are found empirically, and may or may not, according to circumstances, be treated as instances of logical, necessary or *a priori* connexion or incompatibility is easily seen in the simple case of colours. To say, "The colour of this thing is greenish-blue" makes sense; "The colour of this thing is greenish-red" does not. No device for handling language can by itself serve to distinguish the two cases or show that the colours of one pair are compatible and the others not. Experience of the colours of the spectrum does show the difference and language can then take account of it. This particular point could hardly have been appreciated before the time of Newton; and before his time the names of the colours could not be used as precisely as they can since (*cf.* B. Russell, *Enquiry into Meaning and Truth*, p. 82).

We generally assume that one thing cannot be in two places at once, or two things in one place. Is this empirical fact, self-evident axiom or linguistic convention? The answer is, surely, all three; but any one predominantly according to the intention of the user. Discussions in the sphere of morals, politics and social theory are constantly liable to confusion because of uncertainty as to whether one is dealing with antagonistic but compatible factors or with incompatibles. Logic cannot discover the difference, but experience may. All this constitutes a serious limitation of logic, and also contradicts Lord Russell's incidental assertion (p. 653) that logical arguments make empirical ones superfluous.

The view here expressed runs counter to that of most philosophers (but not Aristotle and Kant); namely, the view that generalisations from experience are limited to assertions of mere contingency, of how things happen for the most part, though they might just as well happen otherwise, while assertions of necessary connexion are entirely non-empirical. This prevalent view seems to rest on the supposition that probable assertions must be assertions about contingent connexions and assertions about necessary connexions must be themselves completely certain. The supposition might be true, but it is hard to see why it should, once the underlying confusion is brought to light.

In conclusion, Aristotle's logic performs a limited but useful

function; Lord Russell's another different one. Nothing more can be asked of either, nor is there any quarrel between them. Anybody who thinks Aristotle did everything has only himself to blame; just as those recent writers who have misused Lord Russell's logic have only themselves to blame. So far as Lord Russell's criticisms of Aristotle are valid at all, it is because his own view of logic as purely linguistic is untenable.

A. D. RITCHIE.

VI.—CRITICAL NOTICE.

Aristotle's Criticism of Plato and the Academy, Vol. I. By H. Cherniss. Baltimore, Johns Hopkins Press; London, Oxford University Press, 1944. Pp. xxvi + 610. $5.00, 33s. 6d.

In his earlier work, *Aristotle's Criticism of Presocratic Philosophy*, reviewed by A. E. Taylor in Mind, XLVI (1937), Prof. Cherniss recommended an attitude of extreme caution towards Aristotle's evidence about the doctrines of his predecessors; each passage, he argued, must be viewed in its context, since A. modifies the earlier views in order to bring into relief certain features of his own doctrine. Thus in *Metaphysics* A the pre-Socratic thinkers are all supposed to have held an unqualified materialism; Plato is then brought in as an extreme partisan of the "formal cause", and it remains for A. to present his own account of causation as a synthesis of opposites. And he gives contradictory accounts of the same doctrine in different places: *e.g.* the Pythagoreans, who appear in the above-mentioned passage as materialists, are elsewhere viewed as upholders of the formal cause. As the original writings of the pre-Socratic thinkers are lost, and the doxographical tradition depends ultimately on A.'s successor Theophrastus, it is only by great care that we can hope to avoid the influence of Aristotelian misinterpretation. Mr. Cherniss is suspicious of the account of the early thinkers as *materialists*, firstly because it is clear from the fragments that they were interested in physical processes as well as in the primary elements of bodies, and secondly because it is anachronistic to ascribe to them A.'s notion of ὕλη; Anaximenes and Heraclitus had never heard of substances and qualities, nor did they view moisture, dryness, heat and cold as *abstractions*. Again, the idea that these early monists explained the variety of phenomena by the condensation and rarefaction of a single material element seems to be an attempt by A. to read into them his own doctrine of contraries. Though we are not here concerned with this argument, some obvious objections may be noted. The account of A.'s procedure in *Metaphysics* A seems questionable. Does he not say that Plato "for the most part followed" the Italian Pythagoreans? It is surely not implied that Plato overstressed the importance of the formal cause—he is rather congratulated on having been the first to recognise it. In these criticisms of his predecessors A.'s main purpose, however imperfectly carried out, is historical. Doubtless his paraphrase of their arguments is often tendentious, but he surely does not treat them as personages in a dialogue, to whom anything roughly resembling their known views may be ascribed. Further, the fact that some of the

pre-Socratics were not only concerned with material elements, but also with natural *processes*, does not in itself prove that Aristotle is wrong to represent them as pure materialists; for it all depends on the sort of explanation they gave. The question how far A. *misrepresents* the materialism of the early thinkers by the application of his own logical concepts is interesting and difficult, but the fact that they *were* materialists is surely confirmed both by the evidence of Plato, in well-known passages from the *Phaedo*, *Sophist* and *Laws*, and by the Epicurean accounts in Lucretius, Book I, and in the *de Natura Deorum*. I notice that Lucretius explicitly ascribes to Heraclitus the view that the variety of phenomena is due to the condensation and rarefaction of Fire, which according to Mr. Cherniss is a misinterpretation peculiar to A. That these accounts go back to Theophrastus is possible, but it is hard to believe that Epicurus made *no* independent enquiry into the history of early philosophy, and simply swallowed the account which he found in the textbooks of an opposing school.

Mr. Cherniss has now published the first of two volumes dealing with A.'s criticism of Plato and the Academy. I must first give some account of its contents. In the *Foreword* the author examines the views of commentators, ancient and modern, and states his own purpose and method. Since the time of Hegel, there has been a conflict of opinion as to the value of A.'s criticism and as to the possibility of reconstructing from his evidence the unwritten doctrines of Ideas and Idea-numbers. Most modern scholars admit that these doctrines were taught, and that there is some hint of them in the *Philebus*, but disagreement as to the meaning of these doctrines, and their relation to the theory of Ideas in its familiar form, is so hopeless that it might seem best to abandon the problem. Mr. Cherniss maintains that there is some hope of success, and he proposes (1) to collect and interpret all passages in which doctrines of Plato and his pupils are criticised, asking how far A.'s treatment is consistent, and noting the distinctions he makes between the various Platonists, (2) to compare his testimony with Plato's dialogues, with the writings of his pupils as far as the fragments allow, and with other ancient evidence, (3) to pass judgment on Aristotle's criticism and discover its underlying motives. (Robin, in the work published in 1908 on Ideas and Numbers, performed the first of these tasks in a limited sphere, but omitted the second.) Mr. Cherniss proposes to give an explicit defence of his interpretation of the text wherever he has found some significant divergence among scholars; and his investigation has been extraordinarily extensive. He does not, however, use or allow others to use arguments "from such general conceptions as the *temperament* or *tendency* of Aristotelian or Platonic philosophy"; and he evades any comprehensive discussion of the various modern theories of the development of Plato and Aristotle, which are only considered so far as they might affect "the import of definite passages or the validity of specific interpretations and

criticisms made by Aristotle". He further disclaims any attempt to give a full account, or even an outline, of the philosophy of either Plato or Aristotle, but promises that in the second volume "the results of the specific investigations throughout the two volumes will be integrated in a general characterization of Aristotle's method of interpretation and criticism", with reference to the earlier study of the criticism of the Presocratics; and that "an attempt will be made to clarify the situation within the early Academy".

The present volume comprises three chapters and eleven Appendices. Chapter I (pp. 1-82) deals with Diæresis, Definition and Demonstration; Chapter II (pp. 83-173) with the Material Substrate; and Chapter III (pp. 174-478) with Form and its Relation to Matter (not including the theories of Idea-numbers, which will be discussed in Volume II). It is impossible here to describe the scope of the Appendices (pp. 479-603), but they include a discussion of Eudoxus' formulation of the Theory of Ideas, and of the question, much debated since the appearance of Jaeger's *Aristotle*, as to the nature of the moving principle in A.'s cosmology.

The entire volume, apart from the Foreword, is therefore devoted to an exhaustive discussion of the meaning of certain particular passages in A. Apart from the inevitable difficulty of grasping a work so planned, the reviewer labours under certain special hindrances resulting from the separate appearance of this volume. It has no index, and as the distribution of topics between text, footnotes and appendices is somewhat arbitrary, it is often very difficult to remember where a particular point has been mentioned. (Thus, at page 240 Mr. Cherniss is dealing with Plato's "arguments from the sciences", *Metaph. A*, Chapter IX. From them we pass to A.'s criticism, from that to Alexander's comment on the passage; from this in turn springs a long discussion of the point whether Plato assumed Ideas of artefacts, on which discussion itself there are some enormously long footnotes.) Moreover, the scope of the promised second volume is rather dimly defined, and there is a chance that it may render some of our criticisms inapplicable. But even after these allowances one may fairly doubt whether the method here employed could ever be made to yield positive results, and whether Mr. Cherniss brings to the task the temperament required in order to get the best from the Aristotelian evidence.

I propose to consider one part of the argument in greater detail, and I will select the chapter on "The Material Substrate". (This title suggests a question of physics, but it should be remembered that the distinction between a formal and a material factor is applied to intelligible objects as well as to sensibles by both Plato and A.) In the *Physics* A. criticises both the doctrine of the "great and small" as the material principle in the ideal world, and the account of Space as the "receptacle", which Plato gives in the *Timaeus*. In the *de Caelo*, as part of a general attack on atomism, he objects to the account of the formation of bodies from elementary

triangles. Throughout this criticism Mr. Cherniss finds nothing but misrepresentation and misunderstanding.

The argument in *Physics* A (Chaps. V-VII) is that the pre-Socratic thinkers employed *contraries* as principles of explanation, and were right to do so, since contraries are implied in all change and generation. But they failed to see that contraries such as "the dense" and "the rare" do not operate directly on each other but on a formless substratum. There are not two ultimate principles but at least three—form, privation, and the substrate. In Chapter IX the same charge is brought against Plato, in spite of the fact that he himself argues in very similar fashion at *Phaedo*, 102*b*-103*c*. Moreover, A. here does not attempt to distinguish between the great-and-small, *i.e.* the material principle of the unwritten doctrines, and the 'receptacle' of the *Timaeus*; and he seems to characterize both alike as "not-being", in contrast to the Idea, which *is*. He makes, also, the obvious point that the 'great-and-small' is the name, not of two principles, but of a single one.[1]

Mr. Cherniss maintains (pp. 88 foll.) that A. here (*a*) borrows his own doctrine without acknowledgment from the *Phaedo*, (*b*) interprets the 'receptacle' of the *Timaeus*, in spite of Plato's explicit statement (*Tim.* 50*b*-52*c*) as an absolute non-existent, an unqualified *μὴ ὄν*, (*c*) by implication misinterprets the *Sophist*, since a similar passage in the *Metaphysics* shows that, in attributing being and not-being to the Platonists as principles, he definitely had the *Sophist* in mind. *I.e.* he does not grasp, or professes not to grasp, the distinction there made between otherness and nothingness.

Mr. Cherniss concludes his criticism on pages 170-172 with the following charges against A. He believed, firstly, that the *χώρα* of the *Timæus* was meant to play the part of "prime matter"; secondly, "that Plato had arrived at the notion of *χώρα* in the same way as he himself had reached that of his primary substrate; in *Physics*, 211*b*, 29-36, he clearly indicates that he understood *Timaeus* 49*b*-50*a* to be a description of alteration intended as proof of the necessity for positing a substrate of qualitative change in which analysis Plato mistook the *place* of the change for the changing subject. A.'s inability to understand that the theory of the *Timaeus* reckons without any material substrate of sensibles and that the *ὑποδοχή* is, as Plato says it is, *χώρα*, and not his own prime matter *manquée* accounts for much of his infelicitous criticism of Platonic physics; the receptacle and the planes seem to him to be two incompatible theories, and he cannot decide whether the former is meant to be "separate" from the elements or not; he misses,

[1] *Physics*, 192a 3 foll.: *Ἡμεῖς μὲν γὰρ ὕλην καὶ στέρησιν ἕτερόν φαμεν εἶναι, καὶ τούτων τὸ μὲν οὐκ ὂν εἶναι κατὰ συμβεβηκός, τὴν ὕλην, τὴν δὲ στέρησιν καθ' αὑτὴν . . . οἱ δὲ τὸ μὴ ὂν τὸ μέγα καὶ τὸ μικρὸν ὁμοίως ἢ τὸ συναμφότερον ἢ τὸ χωρὶς ἑκάτερον· ὥστε παντελῶς ἕτερος ὁ τρόπος οὗτος τῆς τριάδος κἀκεῖνος. Μέχρι μὲν γὰρ δεῦρο προῆλθον, ὅτι δεῖ τινὰ ὑποκεῖσθαι φύσιν, ταύτην μέντοι μίαν ποιοῦσιν.*

therefore, the explanation for the volume of bodies. So he overlooks, too, the part played by the ideas, save in so far as he confuses them with the *μιμήματα* to argue that they must be in space, and objects that qualities cannot be derived from planes (*de generatione*, 316*a*, 2-4)". Mr. Cherniss concludes this part of his criticism with a renewal of the charge that A. reads into all his predecessors, including Plato, the belief in a substratum which can be the subject of contrary qualities, and so serve to explain the generation of bodies from one another.

Now these charges seem to be both improbable and inconsistent with each other, and to be due ultimately to want of historical imagination.

(1) If the argument proving the need for a third factor in change besides the pair of contraries is borrowed from the *Phaedo*, and if Plato "is still true to this doctrine in the *Timaeus*" (p. 91), Aristotle cannot *also* be wrong in interpreting the *χώρα* of the *Timaeus* as a substrate. Here and in many similar instances, Mr. Cherniss has gone too far, and not only proved A.'s interpretation to be wrong, but made it impossible for any other to be right.

(2) As regards the *Timaeus*, A. should not be simply charged with "misunderstanding" at a point where there has been so much diverse interpretation of the Platonic text. The view that Plato in some sense teaches a doctrine of material substance has been held by critics who cannot possibly be suspected of partiality to A., or of deriving their interpretation of Plato from him. Among ancient commentators it seems the rule rather than the exception to use the term *ὕλη* and its derivatives in expounding the *Timaeus*; Plutarch, Simplicius and the various neo-Platonists and neo-Pythagoreans mentioned in Simplicius' commentary on the third book of *de Caelo* would all have been surprised to learn that Plato had eliminated the notion of matter. Martin thought that the corpuscles of the *Timaeus* consist of thin plates of matter enclosing a hollow interior. Robin, Rivaud and Milhaud all think it proper to use such terms as "matter", "subject" and "substratum" in expounding Plato, and Milhaud (*Philosophes géomètres de la Grèce*, p. 293) defines the receptacle as "ce qui reste des corps quand on leur ôte toutes les qualités qui se perçoivent". These critics may be in error, but at least they could read Plato for themselves, and no one could say, unless in order to maintain a thesis, that they were influenced by A.'s exposition. The fact is surely that the notion of a "receptacle" (which is introduced at 49*a*, and explained by the comparison of gold beaten into a variety of shapes) is *wider* than that of space (which is not mentioned until 52*a-b*). The term *δέχεσθαι* is applicable both to the occurrence of events in a vacant area, and to the reception of imprints by a formless substance, and Plato exploits this ambiguity. The obscurity of the passage could not, it seems to me, be better brought out than it is by A. in *de Gen. et Corr.*, 329*a*, 13 foll.

(3) As to the charge that A. failed to understand that Plato in the *Sophist* meant to distinguish relative not-being from absolute non-entity, this is quite incredible, and it is much more likely that Mr. Cherniss has wrongly connected two passages which have no relation to each other. The argument (pp. 95-96) appears to be: Firstly, A. ascribes to Plato a belief in two ultimate principles, the One and the indeterminate dyad, and points out that the latter, in spite of its name, is single (see *Physics*, 192*a*, 3, quoted above). A. understands these principles as contraries, whereas Plato himself, in *Phaedo* and *Timaeus*, makes one εἶδος contrary to another, but uses no contrast of Form and Matter. Secondly, since the One and the εἶδος are repeatedly said to have real and true being, and since the principles are interpreted by A. as contraries, it follows (for him, though not, of course, for Plato) that the material principle is in the absolute sense, μὴ ὄν. A., then, interprets the relative μὴ ὄν of the *Sophist* as absolute not-being, transfers it to the physical world, though Plato explicitly says it is an Idea, and equates it with the "receptacle" of the *Timaeus*, though Plato explicitly says that this is a real and permanent factor of the world. He is then able to argue (*Physics*, 192*a*, 14-20), that the Platonic view involves the impossible consequence that a contrary strives for its own destruction, τὸ ἐναντίον ὀρέγεσθαι τῆς αὑτοῦ φθορᾶς.

It is in itself incredible that A. misunderstood the main argument of the *Sophist*, and Mr. Cherniss has to admit that in an earlier section of the *Physics* (187*a*, 3-6), A. himself points out the difference between otherness and negation of being. If, therefore, we are to allow A. any vestige of sincerity, Mr. Cherniss's statement of his argument must be incorrect, and the error consists, I think, in referring to the dialogues a criticism which is aimed primarily at the unwritten doctrines. I do not think that *Physics A*, Chapter IX, contains any allusion, either to the μὴ ὄν of the *Sophist*, or to the "receptacle" of the *Timaeus*. There is no reason for bringing in the *Sophist*, unless one is to suppose that it is referred to wherever the phrase τὸ μὴ ὄν occurs. And the sentence (192*a*, 13) ἡ μὲν γὰρ ὑπομένουσα συναιτία τῇ μορφῇ τῶν γιγνομένων ἐστίν, ὥσπερ μήτηρ should not, I think, be taken as a reminiscence of the *Timaeus*, but as a straightforward allusion to A.'s own theory of reproduction. In fact, there is nothing here to show how A. thinks that the logical "otherness" of the *Sophist* is related to the physical space of the *Timaeus*, or to the material principle which is a feature of the *Philebus* and the unwritten doctrines. The last-named was presumably a more general expression of the material principle, including both the physical and the logical; but Plato left this difficult question unsettled. A's opinion, if we had it, would be worth more than any interpretation which we can offer, but this is not the point which he is raising in the *Physics* passage. I quote his own words from 192*a*, 13: "One of the principles persists and, like the mother, is a joint cause, together with form, of events (or products). The other term

in the contrariety might well appear, if one should attend solely to its destructive influence, to have no existence at all. For, granted the existence of something divine and good and desirable, *we* make a distinction between the contrary of this good and the subject which by its proper nature desires and tends towards it, whereas *they* are obliged to say that a contrary desires its own destruction. It is impossible, however, either for form to desire itself (since it is without defect) or for its contrary to desire it, since contraries are destructive to each other." Now it is clear that in the *Philebus* (1) πέρας and ἄπειρον are viewed as contraries, though no doubt the extremes of πέρας, *e.g.* hot and cold, are also in a different sense contrary to each other, and (2) ἄπειρον is the subject upon which πέρας operates, or is imposed, since in the division of reality into four classes at 23*c* foll., no room is left for the subject or substratum. It is perhaps not clear from the *Philebus* that Plato regarded πέρας and ἄπειρον respectively as a good and a bad principle, but A.'s statement is positive, and is repeated in *Metaph. A*, 988*a*, 7-16, where Plato's system is summarised in very similar terms. This sytem as A. knew it from oral instruction was *dualistic*, though allowance must be made, as he asks, for the fact that one of the contrasted principles is named a dyad. On such a system, he claims, two principles of opposite nature must operate directly on each other, and indeed one must "desire" the other, *i.e.* desire its own destruction. How the χώρα of the *Timaeus* fits into this scheme A. evidently did not know and perhaps Plato did not know either. We ourselves should, therefore, beware of claiming to know.

The discussion of this topic has perhaps given some idea of the manner in which A.'s criticisms of Plato are treated throughout the volume. It would seem to be Mr. Cherniss's sole object to draw A. into a game at which he can't win. The result is not even a positive interpretation of Plato, since by attacking A. at all points Mr. Cherniss often leaves no possible interpretation standing. (For instance, when A. asks why, on the Platonic view, mathematical solids have not the property of heating and burning, Mr. Cherniss replies: "The difference is simply that the corpuscles are material and mathematical tetrahedra are not." This is just the admission which A. requires; but it is inconsistent with the claim that Plato had eliminated matter.) The interesting recent theories of the development of Plato and Aristotle receive no consideration, in this volume at least, except in reference to particular passages (see pp. 264-5 above). Now it has been the trend of these theories to acquit A. of crude misunderstanding of Plato: their authors have called attention to the contrasted literary form of dialogue and treatise, and to the difference between Plato's dialogues and his oral teaching; they have successfully recreated the spirit of friendly debate which prevailed in the Academy; they have made both Plato and Aristotle seem intelligible human beings, whose changes of view were determined partly by circumstances and partly by the intellectual

movements of the time. Some of us had therefore hoped that the bad old thesis of A.'s misunderstanding of Plato had crumbled. Alas! these advantages are now lost. Mr. Cherniss officially postpones consideration of these theories until the end; but it is clear from the treatment of particular passages that he cannot accept them and yet has no alternative to offer. He is fully entitled to his opinion; but surely the proper place for an examination of these theories is at the beginning, since, if true, they must necessarily affect the interpretation of *all* criticisms passed by A. on the doctrines of the Platonists. To brush these views aside, while one records and examines practically every divergent interpretation of particular sentences, seems to me a serious fault in method.

As to Plato's development, Mr. Cherniss appears to deny it, and to insist on the unity of his thought throughout the dialogues. He will not admit that the notion of *ψυχή* as the origin of movement is introduced after the *Republic*, but declares it to be implied in the criticism of Anaxagoras in the *Phaedo*, and finds it, I believe, as far back as the *Charmides*. He also denies that a new phase of the theory of Ideas opens with the *Theaetetus* and *Parmenides*: Stenzel's argument on this point is brushed aside and Mr. Cherniss makes Plato "hypostatize the Socratic concepts" (p. 214). I must admit that I find this sadly reactionary, and scarcely know to what arguments to appeal. But (1) there is surely an obvious contrast between the *Phaedo* and the *Phaedrus* and *Timaeus* in regard to the essential nature of *ψυχή*. The proof of immortality in the *Phaedo* depends on the fact that the soul has the same *kind* of being as the Ideas; and change and movement are at this stage not related to the soul, but dismissed as fallacious appearance. That Plato already has the teleological interpretation of nature before him as an ideal is certainly true, but nothing more than this can be inferred from the criticism of Anaxagoras; and if Plato already had at his disposal the theories of the "receptacle" and of *ψυχή* as the origin of movement, his treatment of the sciences in the *Republic* would have been quite different. Would he not also in that case have given a very different turn to the argument about the tripartite soul in Book IV? (2) Plato practically tells us through the mouth of the Athenian Stranger (*Laws*, 821e) that he had learnt the truth about the planetary motions when he was no longer a young man, and makes it clear that this was for him a momentous change. (3) In denying the development of the theory of Ideas, Mr. Cherniss says: "The ethical concern of Socrates and the subject matter of the early dialogues make it probable that Plato's original incentive was the vindication of absolute ethical standards; but such an incentive, particularly in view of the current tendency to challenge normative ethics by means of relativism, must have led at once to the epistemological problem." He proceeds to maintain in opposition to Stenzel that the Ideas from the beginning were general concepts, and were not confined to ethics and mathematics. But among the passages

quoted as evidence for this, *Republic X*, 596*a* is irrelevant, since Plato is there already on the verge of the new "criticism" which we meet in the *Theaetetus*, and the phrase "accustomed method" must not be read literally; *Phaedo*, 78*d* and 100*b*, seem to me to prove nothing;[1] and *Phaedo*, 65*d-e* and *Meno*. 72*a*-73*c* strongly confirm Stenzel's thesis since such instances as health, strength, and size are all within the framework of his ἀρετή-εἶδος doctrine. Further, if the Socratic discussions "must have led at once to the epistemological problem", how is one to explain the character of the problems raised in the *Theaetetus* and *Parmenides*, and why was Plato so slow to perceive the logical objections to the independent existence of the Ideas?

There is a similar scepticism about A.'s own development; it is not clear whether Mr. Cherniss means to deny the fact of his early Platonism, but he gives no account of his transformation from a disciple into a captious critic; and he denies all traces of development within the surviving treatises. The large number of Platonic and Academic theses mentioned in the *Topics* indicates only that A. "expected his audience to find such definitions defended in actual debate, presumably by members of the Academy" (p. 19); and the fact that the lines of refutation suggested in the *Topics* are sometimes inconsistent with A.'s own positions in other treatises would not justify the conclusion that his own views had undergone development, but merely emphasizes "the pedagogical and dialectical purpose for which these examples have been introduced into the *Topics*". Jaeger's view of the structure of the *Metaphysics* is criticised, but his main thesis is nowhere squarely met. This is in accordance with the plan of exposition announced in the Preface; but it seems a mistake in method to delay consideration of a view which, if true, would illuminate the whole character of A.'s criticism. Jaeger has distinguished in many of the treatises an earlier nucleus, in which the criticism of Plato was essentially still part of a debate within the Academy, and was so understood both by the speaker and by his audience. (The use of the first person plural in *Metaphysics A* may not be as frequent as Jaeger has said, but how does Mr. Cherniss explain its presence there *at all?*) And since the treatises are not published books, we may suppose, and can indeed take it for granted, that A. gave his audience, if their youth made it necessary, some oral account of his relationship to the Platonic school; in the *Ethics* such an apology actually survives. I suppose that it is simply the spirit of debate which explains why A. sometimes brings against a Platonic position an objection which Plato is known to have acknowledged. In speaking of the τρίτος ἄνθρωπος argument Mr. Cherniss says (p. 293): "Citation of first appearances and reference to the source of one's arguments *are conventions of modern*

[1] My meaning is that ἁπάντων in 65*d* and πάλλα πάντα in 100*b* simply mean "all things of which we agree that there are Ideas", not all things whatsoever.

scholarship by which A. cannot justly be bound; but if Plato had answered the argument or dismissed it as invalid anyone who used it against him thereafter, even were he its originator, was bound to recognise the Platonic defence and to explain why the objection was not thereby invalidated." It seems to me that if the implications of the words which I have italicised had been thought out, a very different book might have resulted.

The thoroughness with which Mr. Cherniss has recorded and examined diverse interpretations of the texts is in itself an admirable thing, and he has set an excellent example at a time when Platonic scholarship is in danger of becoming parochial. We owe him a debt for the refutation of a great number of ill-considered views. Nevertheless, I suspect that the same work will in due course have to be undertaken afresh in a more impartial spirit. It is depressing to see great powers of intellect and observation spent on the compilation of a book by a mistaken method, and on a theme with which the author has little natural sympathy.

D. J. ALLAN.

VII.—NEW BOOKS.

Reason and Conduct in Hume's Treatise. By R. M. KYDD. (Oxford Classical and Philosophical Monographs.) London, Oxford University Press, 1946. Pp. ix + 196. Price 12s. 6d.

THIS book deals with only a small part of Hume's ethical thought, namely the question whether and in what sense reason can move to action. It is a very competent piece of work and has much power of philosophical analysis, so that one would be glad to read a second work by Mrs. Kydd. But I much regret the narrow limits which she has set herself in her book. It is in fact limited to one particular question raised by Hume, and even the discussion of this suffers because it is not brought into sufficient connection with the general framework of Hume's ethical system. Further, the account seems to be almost entirely based on the *Treatise* bks. II and III. In only two passages is there any mention of the *Inquiry concerning the Principles of Morals*, and even here no reference is made to specific passages, while there is not a single quotation. I do not of course accuse Mrs. Kydd of being unfamiliar with the work, but I cannot conceive why she did not supplement the numerous quotations from the *Treatise* by some from the *Inquiry*, and am sure there are relevant points which she neglected in consequence. In particular, Appendix I to the *Inquiry* giving Hume's reasons for his rejection of rationalism in ethics should have been carefully discussed.

The actual problem raised, we are told, is discussed on its own merits and not primarily as a matter of historcal interest. If so, it seems to me, the field should have been wider and should not have been confined to one author, however distinguished and important. We should also have expected Mrs. Kydd to end in that case by giving her own views, which she does not do. The tendency of her interpretation of Hume is to show that he really gave to reason a much more important place than he is generally thought to have done and probably than he realized himself, and it is in this respect chiefly that reading the book has affected my own understanding of Hume, though I should not wish to go quite so far as the authoress. She claims that his view is not that "good" means that of which most men feel approval in fact, but that of which they would feel approval if they had an adequate idea of its character. For approval is a type of emotion which can only arise subsequently to reflection (so she interprets Hume), since to have it at all we must first take up an impartial point of view. Nor does Hume's doctrine that we cannot act without desire destroy the influence of reason provided we admit that we have a desire to do what is reasonable as such, a point which Hume leaves obscure. The suggestion is made on page 162 that the reason why Hume did not hold this was because it was incompatible with his theory of the self as "a mere bundle of impressions and ideas", but I think this point ought to have been expanded somewhat. Another topic which merited fuller discussion is the connection or lack of connection between the two problems whether reason can affect action directly and whether reason can determine what is right. Hume thought there to be so close a

connection that he seems to take a negative answer to the first as necessarily involving a negative answer to the second and even makes this his chief ground for such an answer, but it seems to me that this position requires either more defence than he gives it or a frank rejection.

Mrs. Kydd devotes a rather long chapter to relating Hume's views to his predecessors, and especially to Clarke, whom she regards as the main opponent that Hume is criticizing when he attacks the rationalist view of ethics. The doubts I feel about her account here are these. (1) She seems to me sometimes to confuse the proposition that I ought to do what is fitting with the proposition that fittingness can supply an impelling motive for action. (2) Surely no rationalistic moralist can have meant that, *e.g.* to break promises was self-contradictory, from which it would follow not that it was wrong, but that it was impossible? All they can have meant is that it involved acting as if a self-contradictory proposition were true. (3) To mention a mere detailed point, not of importance for the book as a whole, though interesting in itself, I do not think she is entitled to question, as she does, whether Locke believed that genuine ethical propositions could be proved *a priori*, and the passage she cites against this only shows that Locke held them not to be universally accepted, which is quite compatible with their being provable, provided the proof is not universally understood, a distinction which Locke himself makes.

I have subjected this book to much criticism, but I do not wish to leave the impression that it is not worth reading. There are a great many points of value in it and my criticisms indicate not that I think it bad but rather that I think it so good as to be annoyed because it is not better.

A. C. EWING.

Aesthetic Experience and its Presuppositions. By MILTON C. NAHM. New York, Harper & Brothers, 1946. Pp. xiii + 553. Price $4,50.

THE author has qualified himself, as few writers on this subject have, by a very extensive reading both of past philosophical speculation on the subject and of contemporary psycho-physical theories, of which the former is essential for dealing with the 'Experience' and the latter for its 'Presuppositions'. Perhaps he has been too anxious that none of this reading should be wasted. Consequently we are presented with very long and detailed examinations of, for instance, the aesthetics of Plotinus, Kant, Maritain, which are bound to be rather inconclusive in a context where it was impossible to criticise the whole philosophical systems implied, and which are also really irrelevant to the present purpose. This irrelevance is indeed tacitly admitted when it is pointed out in a few concise sentences that Plotinus was not talking about *our* aesthetic experiences but about a beauty which no man, among us at least, has seen at any time, and that Kant (like Plato in some moods) intolerably confined aesthetic experience to the appreciation of arabesque. On the other hand Croce and Collingwood are rather cursorily dealt with, perhaps because their general conclusion is in harmony with that of the author—that a work of art is a symbol of the artist's 'mood', apt to communicate it to others. His main differences from them are: (1) that, as he rightly points out, they misuse language in calling the artist's 'image' 'the work of art' when his image is really the aesthetic experience which he tries to communicate in the work of art proper. (2) He is much more interested than Croce in the 'presuppositions' of artistic experiences, *i.e.* in the ways in which certain sensibilia have

historically become symbolic; and if not more interested in this than Collingwood, better equipped. At the same time I must say that the chapters on biological and cultural *Appercepzionismus* are to me very unconvincing in detail. (3) He does not appear to think that aesthetic experience has value in itself, but only as a means to 'courage' or the will to live, which seems at least dubious.

Probably connected with the last point is the strange assumption, pervading the whole book, that the aesthetic experience contains an "antinomy" or, as the author elsewhere names it, "the discontent integral to aesthetic experience". Certainly art, like life, is not all milk and honey, but I know of no experience to which discontent is less "integral" than that of beauty. And indeed it seems to be admitted that the alleged antinomy is not in the aesthetic experience but in the erroneous intellectualist theories about it of the Platonists and Kantians (pp. 141, 153, 166). Incidentally, however, the suggestion that the 'reproductive symbolism' of art is depressing, though the 'productive' is exalting, may account for the puzzling hankering of the eighteenth century after 'melancholy'.

His view that there is something 'debasing' about the aesthetic experience naturally interests Professor Nahm in Aristotle's 'mimetic' and consequently 'cathartic' account of its foundations, to the neglect of the other instinct for harmony and rhythm on which the *Poetics* lays almost equal emphasis. On page 300 we are told both that Zeller does not believe "that *catharsis* is the purification of the soul from a feeling" and that "in his view . . . the feelings aroused by art are purified". No doubt these two sentences could be interpreted in non-contradictory senses, but clarification is desirable.

The word clarification recalls the reviewer to the ungrateful duty of complaining that this book is written in a style so careless or so unfamiliar as to deprive it of much of the value it should have. Innumerable sentences require once or more re-reading; a large number do not repay it. The most obscure are naturally too long for quotation in a review; one instance must suffice: "The problem remains, therefore, whether on these grounds the assumption that the serious non-aesthetic theory of the origin and nature of art is competent fully to account for each and every product of craft." (p. 194). Here, though I cannot construe, I can guess the meaning; I wish it were always so. Some of these puzzles occur in mere phrases, and some of these may be slips of the pen or of the printer. I presume that a "footless errand" should be a "bootless" one. Without doubt an *i* in the note on p. 261 would be less shocking as an *e*. In at least one instance I am driven to read for 'presupposed by' 'presupposes', and for 'former' 'latter'. These few quotations may seem trivial in comparison with the merits I have indicated, but I believe most readers will agree that the cumulative effect which they exemplify comes near being disastrous.

E. F. CARRITT.

George Berkeley's Philosophy re-examined. By F. BENDER. Amsterdam, H. J. Paris, 1945. Pp. x + 108. Price not stated.

THIS is a pains-taking, well-informed study, largely indebted to G. A. Johnston's *The Development of Berkeley's Philosophy* (1923) and taking account of most of the recent work on Berkeley in these islands and on the continent. It is written in good, clear, English (with an occasional mistake

in idiom), and it has earned a Doctorate in Philosophy from the University of Amsterdam.

The title sounds to us somewhat ambitious, and the work covers too much ground; but its main discussions are thorough and useful.

After a sketch of the *Commonplace Book* (*Philosophical Commentaries*) and a careful analysis of the Essay on Vision, Dr. Bender comes to the *Principles*. He takes the correct view of the position of the Introduction and writes a balanced and just estimate of it (p. 31), not resting immaterialism on the refutation of abstract ideas, nor minimizing the importance of that refutation. The *Principles* was written to prove that there is no material substance, and Dr. Bender rightly makes that denial central; but his account of the arguments against matter is open to two serious criticisms: (1) He gives an idealist twist to the *esse est percipi*, taking it in terms of modern tags like "no object without a subject", instead of concentrating on "what is meant by the term *exist* when apply'd to sensible things" (Princ. 3). (2) He says that the main arguments against matter are vitiated by an "equivocation" in Berkeley's notion of idea, which (says Dr. Bender) has to cover both "the thing apprehended and the act of apprehension". (p. 46). Surely the "equivocation" alleged is a hesitation, or a downright mistake, in the mind of the interpreter of Berkeley, or, perhaps, a modern reader's failure to read the term *idea* with a grain of historical imagination. Berkeley is never tired of saying that an idea is passive, and that there can be no idea of an act. How then can his idea of sense, fairly interpreted in its historical setting, cover an act of apprehension? It can't, and doesn't. His idea of sense is "entirely distinct" from the mind and "heterogeneous", and his is a philosophy of sense and spirit, and not of spirit alone.

Under the influence of Fraser, Dr. Bender overpraises *Siris* and tries to show that it represents "an essential change" in Berkeley's theory of knowledge. "In *Siris* the term *Idea* (now often with a capital) has acquired a new, metaphysical meaning. Plato's influence becomes more and more evident." (p. 77). In point of fact, Berkeley's *early* works uniformly print *Idea* with a capital, and *Siris* is, I think, almost the only work to use the *lower case*. But that typographical detail is neither here nor there. What matters is that neither in *Siris* nor anywhere else does Berkeley accept the Platonic ideas, nor abandon immaterialism, nor modify his theory of knowledge. In *Siris* he calls the direct object of sense *appearance*; thirty years earlier he had called it *idea*. In the second edition of the *Principles* he permits the term "notion of spirit", calling the issue "an affair of verbal concern" (*Princ.* 142); twenty-five years earlier he had permitted (unwillingly) the term "idea of spirit . . . in a large sense" (*Princ.* 140). That is, he changed his technical terms, as we all have to do from time to time, to keep in touch with changing fashion and outlook; but those verbal changes are purely verbal, and represent no change of heart or of mind or of teaching.

Berkeley once wrote, "Ignorance in some sort requisite in ye person that should discover the Principle". And ignorance to-day—a wise man's ignorance—is needed to re-discover it. Modern critics of Berkeley are far too clever and sophisticated. Hence all this talk about his early sensualism and later rationalism, his development, his idealism, his notionalism. Why not take him for what he was, a plain, common-sense, honest-to-goodness thinker who knew nothing of Kant and cared little for categories, but faced up to the primary facts of life, and said, "Here are spirits and ideas, minds and sensible things. There's God. Where's matter?"

The Basis of Criticism in the Arts. By STEPHEN C. PEPPER. Cambridge, Mass., Harvard University Press; London, Oxford University Press, 1945. Pp. 170. Price 14s.

THE author's object is to provide an empirical basis for objective criticism of the 'aesthetic work of art', *i.e.* of the thing which we rightly call beautiful or ugly in art. But since what we call beautiful depends upon our sense organs, our language, sex, colour, age, and culture, this 'objectivity' can only claim to predict in what works a 'normal' man (who turns out to be an 'ideal' man) of a given language and culture will probably find the most pleasant, vivid, highly organised and biologically and socially satisfactory contemplative experience if he takes sufficient trouble.

The empirical method consists in selecting four philosophical systems of Western civilisation, whose existence is an empirical fact, and showing what account they give of the 'aesthetic work of art'. Since there is no empirical proof of the truth of any of these systems, they must all be treated impartially as hypotheses to be tested by their agreement with what the 'normal' man, of appropriate culture, experiences, if he takes trouble, in face of given 'aesthetic works of art'. So this rather cumbrous machinery gives birth to the very respectable conclusion that Shakespeare's sonnet 'When to the sessions of sweet silent thought' is much better than Hopkins' 'I wake and feel the fall of dark not day'. But has 'subjectivity' been escaped? If (as I conjecture, partly from his silence) the author would prefer a given religious work of El Greco to a given Vermeer or Chardin or Botticelli, and Coleridge's *Glycine's Song* to Shelley's *Hymn of Pan*, and if I reversed either verdict, each might perhaps claim that his 'ideal man' would agree with him. But can anything more be said than that either stimulus seems to be capable of exciting a vivid aesthetic experience in a person of western civilisation who has given some attention to the matter? How purely aesthetic or how valuable each of the two experiences is might perhaps be known to a God who sees the heart. I think some experiences of my youth in face of pictures or poems which now seem to me second rate were more purely aesthetic and valuable than any I have had since.

I fancy the author comes nearer the heart of the matter in his final chapter (or Supplementary Essay) on 'The Basis of Criticism in the Arts'. Here he asks what, in various arts, is the 'aesthetic work of art' and how much of it is 'objectively' and how much 'subjectively' contributed. This analysis is, I think, in great part original. It points out that a canvas is all before the eyes at once but what is 'seen' depends to begin with on the physiology of the human eye and the presence of light, and secondly on attention and familiarity and memory; and moreover what is felt, which is also part of the 'aesthetic work of art', depends upon a hundred details of temperament, association and culture. A statue is not all before the eye at once, still less a building; they have to be 'grasped'. When we pass to the musical score which needs to be performed, the play which needs to be staged and acted, the novel which has to be imaginatively lived, the problem is immensely complicated. Something is put before us by the artist and each of us makes of it what he can. The author is optimistic about the 'convergence' of our various efforts, but he certainly contributes to an appreciation of why they diverge.

E. F. CARRITT.

De La Justice. Par Ch. Perelman. (Actualités Sociales, Nouvelle Série. Bruxelles: Office De Publicité, 1945, Pp. 84.

From a very brief review of some "current definitions of justice" the author of this essay arrives at the conclusion that it is not possible to pronounce finally in favour of any theory. But one can none the less provide a scientific definition of 'formal justice' in terms of some factor that is common to the theories that he instances. This common factor he finds in the "principle of action according to which the members of the same essential category must be treated in the same way" (p. 27). But can justice, in any sense of the term that is properly ethical, be conceived in this way as the "correct application of a rule" (p. 56)? What if the rule is bad? The most that the author has to suggest here is that, where rules conflict, we should apply the less rigid principle of 'equity' which requires us "to treat the members of the same essential category in not too unlike a manner" (p. 48), and that rules are to be justified by presenting them as instances of a wider rule. But all final decisions are 'irrational' and 'arbitrary'. "There is no single system of justice" because "value has no foundation in logic or in reality" (p. 73). It is "neither universal nor necessary" (p. 73). This is not, of course, a very novel view, but it has usually been presented with greater acuteness and a greater sense of its difficulties than are exhibited here by Professor Perelman. The position is not improved by describing the ideal of charity as "a stranger, not only to all spirit of system, but also to all reasoning" (p. 58) and having as its aim the relief of suffering "without taking any other circumstances into account" (p. 58).

The discussion of these topics is prefaced by an account of philosophy as "the systematic study of confused ideas" (p. 12). By stripping an idea of its 'emotional meaning' a scientific analysis becomes possible. The idea will then "cease to be a philosophical one", but its 'emotional coloration' will become "attached to another idea" (p. 13). This should not dismay us "for it will enrich the field of philosophical controversies" (p. 13). But it is doubtful whether many readers will derive very solid comfort from this assurance.

H. D. Lewis.

Received also:—

A. Edel, *The Theory and Practice of Philosophy*, New York, Harcourt, Brace & Co., 1946, pp. xii + 475, $ 3.00.

G. van Molle, *La Connaissance dialectique et l'Expérience existentielle*, Liège, G. Thone, pp. 174.

J. Dewey, *Problems of Men*, New York, Philosophical Library, 1946, pp. 424, $5.00.

J. A. Martin, Jr., *Empirical Philosophies of Religion*, New York, King's Crown Press; London, G. Cumberlege, 1946, pp. xii + 146, $2.00, 13s. 6d.

C. Werner, *Le Problème du Mal dans la Pensée humaine*, Lausanne, Librairie Payot, 1946, pp. 126, fr. 4.

L. M. Bazett, *Beyond the Five Senses*, Oxford, B. Blackwell, 1945, pp. xvi + 96, 7s. 6d.

H.-L. Miéville, *Brèves Réflexions sur l'Amour, sur la Vie et sur la Mort*, Lausanne, F. Rouge et Cie. S.A., pp. 36.

J. Wild, *Plato's Theory of Man*, Cambridge, Mass., Harvard University Press; London, G. Cumberlege, 1946, pp. x + 320, $5.00, 23s.

D. J. B. Hawkins, *A Sketch of Mediaeval Philosophy*, London, Sheed & Ward, 1946, pp. vii + 148, 6s.

M. H. Carré, *Realists and Nominalists*, Oxford University Press, 1946, pp. vi + 128, 8s. 6d.

J. de Finance, *Être et Agir Dans la Philosophie de Saint Thomas*, (Bibliothèque des Archives de Philosophie), Paris, Beauchesne et ses Fils, 1945, pp. viii + 371.

M. R. Konvitz, *On the Nature of Value: The Philosophy of Samuel Alexander*, New York, King's Crown Press; London, G. Cumberlege, 1946, pp. viii + 119, $2.00, 13s. 6d.

S. K. Maitra, *An Introduction to the Philosophy of Sri Aurobindo*, Benares Hindu University, 1945, pp. 112, Rs. 2/8, 5s., $1.25.

H. Piéron, ed. by, *L'Année Psychologique* (40th year, 1939), 2 vols., Paris, Presses Universitaires de France, 1942, pp. xxiv + 416; 417-868, 250 fr.

C. Boenheim, *Introduction to Present Day Psychology*, London, Staples Press Ltd., 1946, pp. 108, 12s. 6d.

W. Brown, *Personality and Religion*, London, University of London Press, 1946, pp. 195, 9s. 6d.

Centenaire de Th. Ribot: Jubilé de la Psychologie scientifique française, Agen, Imprimerie Moderne, 1939, pp. 601.

J. R. Caldwell, *John Keats' Fancy: The Effect on Keats of the Psychology of his Day*, Ithaca, N.Y., Cornell University Press; London, G. Cumberlege, 1945, pp. ix + 206, $2.00, 12s.

G. Holmes, *Introduction to Clinical Neurology*, Edinburgh, E. & S. Livingstone Ltd., 1946, pp. vii + 183, 12s. 6d.

R. Landau, *Sex, Life and Faith: A modern Philosophy of Sex*, London, Faber & Faber Ltd., 1946, pp. 319, 21s.

H. Brinton, *Vengeance is Dear*, London, C. & J. Temple Ltd., pp. 126, 6s.

F. de Haves, *The Equilibrium Theory of Consciousness*, Glasgow, M. Douglass Macrae, pp. 15, 2s. 8d.

J. C. Archer, *The Sikhs: A Study in Comparative Religion*, Princeton University Press; London, G. Cumberlege, 1946, pp. xi + 353, $3.75, 25s.

Philosophie, Cahier III (Études et Recherches publiées par le Collège Dominicain d'Ottawa), Ottawa, Éditions du Lévrier, 1945, pp. 258, $1.50.

J. Bonsirven, S. J., *Les Enseignements de Jésus-Christ*, 3me Édition, Paris, Beauchesne et ses Fils, 1946, pp. 511, 420 frs.

Union Seminary Quarterly Review, Vol. I, No. 2 (Jan. 1946), New York, The Students, Faculty and Alumni of Union Theological Seminary, pp. 47, Annual Subscription $1.00, 35 c. per copy.

Catalogue of Medical Books published by E. & S. Livingstone Ltd., Edinburgh, 1946, pp. 63. Copies will be sent to any address on application.

Note.—Prof. N. Baladi's *La Pensée Religieuse de Berkeley et l'Unité de sa Philosophie*, which was reviewed in the last number of MIND, can be obtained from B. Blackwell, Oxford, at the price of 10s. 6d.

VIII.—PHILOSOPHICAL PERIODICALS.

Revue Néo-Scolastique de Philosophie. Tome 43 (2*me* Série, Nos. 67-68). Août 1940, Août 1945. **Albert Milet.** *Les 'Cahiers' du P. Maréchal. Sources doctrinales et influences subies.* [A careful analysis of the influences that helped to mould the philosophic thinking of the author of *Le Point de Départ de la Métaphysique.* M. was much influenced in early years by J. Thirion, S.J., who taught him physics and interested him in the history of science, and by Victor Grégoire, under whom he studied biology from 1901 till 1905. During these years he was also mastering scholastic philosophy and familiarising himself with British and American psychologists, particularly James. It was as a result of these studies that he began reading St. Thomas for himself, without any guide, and primarily to find how he dealt with certain special problems. The two conclusions M. drew were that static rationalism was a failure, and that will and intellect inter-penetrate each other and so stand in relations of reciprocal causality. In these conclusions he was further confirmed by a study of Kant, whose importance was not then fully understood by Catholic philosophers. Three French thinkers influenced him greatly. From Gratry he accepted the doctrine that the apperception of any finite object implies the subconscious recognition of an infinite, which may be brought by reflection into fuller consciousness. Bergson helped him to understand how potency and act are related in experience, but M. felt compelled to differ from him, because he does not distinguish, as St. Thomas does, between the becoming (*fieri*) which constitutes being (*esse*), and that which constitutes act (*actus*). The influence of Blondel was very much more pronounced. Blondel explains the unity of experience through action—will realising itself in action through intellect. St. Thomas explains it through action also, meaning by that the intellect guiding the will toward an intuited end. The difference between these two points of view is one of accent, and it is easy to see that Gratry's theory of apperception supplies the missing link. Pierre Rousselot's *L'Intellectualisme de St. Thomas* appeared too late to be formative, but was much appreciated by M.] **Franz Grégoire.** *Hegel et la primauté respective de la raison et du rationnel.* [(1) Speaking in terms of efficient causation, reason (*Vernunft*) by the act of knowing does not produce the rational (*das Vernünftige = Begriff*), either as the complete order of being, or as the realm of nature, whether that realm be regarded as an independent order. or as a system of representations. (2) Speaking in terms of logical conditions and final causation, the rational as the complete order of the real is the basic condition (*fondement*) of reason and its end, and conversely ; but reason is the basis and end of the rational conceived as the order of nature to a greater degree (*plus intensement*) than the rational so conceived can be said to be the basis and end of reason. Reason in act is the *raison d'être* of the rational as knowable, and also as known, for Hegel does not admit any incompleteness in the realisation of reason in knowledge. (3) Speaking in terms of specification, reason determines (*spécifie*) its object, but does so in conformity with the

determinations of the rational. The rational as the essence of everything determines the real object, the object as known, and the activity of the mind. A *tour de force* of constructive analysis worthy of Professor Broad.] ÉTUDES CRITIQUES. *Chroniques.* [Gives a history of the Institute of Philosophy at Louvain during the years of occupation, that reflects great credit on the faculty and students. Records the heroic death of Canon Pierre Harmignie (1885-1944), for thirty years a member of the faculty. Gives particulars of the Husserl Archives now established at Louvain.]

REVUE PHILOSOPHIQUE DE LOUVAIN. (formerly called *Revue Néo-scolastique de Philosophie*), Tome 44. (Troisième Série, No. 1) Février 1946. **Georges van Riet.** *La critériologie de Mgr. Mercier.* [Mercier began in 1885 with a correspondence theory of truth, similar to that of St. Thomas, which he supplemented by the criterion of non-contradiction for judgments concerned only with the ideal order. In 1889, recognising the difficulties of naïve objectivism, he made agreement between the concept and the percept his criterion of truth for empirical judgments, not, as before, agreement between the concept and the thing. In 1899, he eliminated correspondence altogether, replacing it by identity between two concepts and between concept and percept. In 1906, he abandoned this for a new theory according to which truth in the real order consists in the perceived or imagined object belonging to the same logical category as another existing in the memory as an essence or ideal type.] **Franz Grégoire.** *Hegel et l'universelle contradiction.* [What did Hegel mean when he said that everything in itself is contradictory? He clearly did not intend to deny the need for consistency in philosophical writings, because he criticised other philosophers for their lack of consistency. An examination of the dialectical triad shows that he attributed the necessity for such movements of thought to the need to avoid contradiction, and that the ground for it was constitutive, not epistemonic. Four important uses of the dictum can be distinguished. (*a*) The reality of any particular, quality, relation or fact entails the reality of its contrary. *E.g.* the idea is self-contradictory, because in it the finite and the infinite, two contrary characteristics, are separated and distinguished. (*b*) Everything that exists is in a state of conflict with its contrary. *E.g.* there is a conflict in man between his finite desires and his infinite aspirations. (*c*) Everything in virtue of its inherent nature is so related to something else that it tends to produce the other, or tends to become the other, or could not exist without the other. *E.g.* duty and happiness mutually involve each other; likewise, necessity and contingency, causality and finality. (*d*) The existence of any particular in isolation from other particulars is impossible. *E.g.* the hour of birth of the contingent is also the hour of its death. In this essay the editor fully sustains his reputation as an expositor of Hegel in a style not unlike that of McTaggart.] **R. Feys.** *La technique de la logique combinatoire.* [This is the first instalment of a new synthesis of combinatory logic, taking account of recent developments and adding much that is new. Part I deals with λ-functions as developed by Alonzo Church, giving notation and rules, a metalogical terminology, and some applications of λ-functions to the definition of the logical constants used in *Principia Mathematica*. Part II is a systematic exposition of the logic of combinators as developed by Curry and Rosser. The elementary operators used are $I(=\lambda\phi\,.\,\phi)$, $W(=\lambda\phi a\,.\,\phi aa)$, $C(=\lambda\phi a\beta\,.\,\phi\beta a)$, and $B(=\lambda\phi a\beta\,.\,\phi(a\beta))$. The

instalment breaks off at a point where the author is using these operators and certain very simple expressions like N(Negation), F(Implication), V(Alternation) and H(Equivalence) to translate some of the most important expressions of non-combinatory logic, such as the negation of a class and the square of a relation. No person who is interested in this remarkable new development of logic should overlook Fey's lucid exposition, particularly in Great Britain, where the importance of Russell's Copernican revolution in logic is not yet fully appreciated.] Études Critiques. [Includes a careful study of *Aristoteles Latinus* by A. Mansion.] Chroniques.

Archives de Philosophie. Volume XVI. Cahier II. 1946. **Joseph de Finance, S. J.** *Cogito Cartésien et Réflexion Thomiste.* [St. Thomas derives knowledge of the self from reflexion (*reflexio*) upon acts of understanding (*intellectus*) whose objects are parts of the external world. Although he admits that there is an inchoate awareness of self-agency (*reditio incompleta*) in every act of sense, effectual knowledge of the self is found only in the understanding, which turns back upon itself completely in order to know its essence (*in intellectu, qui reditione completa redit ad cognoscendum essentiam suam.*) It knows these acts as the expression of an intellective essence, and as causally connected with the faculties (*habitus*) of a substance. Thought is therefore an immanent operation, conditioned by the passively derived data of sense and the natural faculty of principles (*habitus naturalis principiorum*) (pp. 7-46). Descartes derives knowledge of God, nature and other minds from awareness of the self in thought (*cogitatio*). He treats thought as though it were a substance, not an operation. It is a single unit with respect to its different determinations, as a given volume is a unit with respect to the different shapes it may have. It is self-contained in its order; the scrutiny of its objects is a scrutiny of thoughts, not things. It is self-sufficient in its contents; all its clear and distinct ideas are innate (pp. 47-75). Both St. Thomas and Descartes regard the self as a substance, but that is the sum of their agreement regarding self-knowledge. *Reflexio* is intuitive; *cogitatio* is at least partly inferential. The self of St. Thomas is partly physical; that of Descartes is purely mental (pp. 76-101). The difference between the ontological status assigned to thought in the Thomist and the Cartesian systems can be partly explained by historical causes. St. Thomas's distinction between proper accidents (*accidentia propria*) and separable accidents (*accidentia separabilia*) has been replaced in Descartes by that between attributes and modes, the attribute being what might be called a *subsistent operation*. Yet there is no place in Cartesianism for the special type of passivity that is represented by the ideas of sense (pp. 102-134). This question also affects the epistemological status of thought. Descartes fails to show that there is in common notions, in the veracity of God, or in the innate idea of the Most Perfect Being, a criterion that can replace the naïve *judicium sensus* in distinguishing the objective from the subjective and the true from the false. Yet his theory of mind rigidly excludes the *judicium sensus* as a criterion of objectivity or truth. St. Thomas's naïve objectivism has this great advantage over Descartes' sophisticated innéism, although there are obvious gaps in St. Thomas's account of sense-perception (pp. 135-169). The value of Descartes' system is that it shows the limits of a metaphysic which is based upon a quest for certainty, and aims at security rather than completeness (pp. 170-179).] Supplément Bibliographique. No. 2, pp. 47.

IX.—NOTES.

JOHN MAYNARD KEYNES, FIRST BARON KEYNES OF TILTON (1883-1946).

LORD KEYNES manifested more perfectly the qualities of Plato's philosopher-king than any other contemporary statesman. His *Treatise on Probability* (1921) contributed greatly to fruitful thought on inductive logic. For these two reasons alone some tribute to him should appear in MIND.

It is not for me to assess the value of Keynes's contributions to economic science or of his services to the nation and to the world. But an outsider can note the remarkable fact that, in the ten years following the publication of his *General Theory of Employment, Interest and Money* (1936), his revolutionary economic doctrines not only have been widely accepted among professional economists, but have become on many points the basis of national economic policy. It has been truly said that no economist since Adam Smith has had so great an influence on public affairs (and Adam Smith, like Keynes, was also a philosopher). This influence Keynes achieved by the reasonableness of his argumentation and the persuasiveness of his literary style, and also by his readiness at all times to reconsider and to modify his general theories in the light of their detailed applications to current problems. His mind was the complete refutation of the vulgar error that a critical intellect is incompatible with a creative one: his continual self-criticism stimulated his constructive imagination, and his omnivorous interests enabled him to perceive connexions that would have escaped the notice of a narrower mind. For Keynes economics was always one of the "moral sciences": though he used mathematical techniques when helpful, he always remembered that mathematics is a good servant but a bad master, and that economics is not an abstract deductive system, but a science concerned with one aspect of human welfare. He liked to consider himself as standing in the tradition of what he has called "the High Intelligentsia of England" (which included Locke, Malthus, Mill, Sidgwick, Alfred Marshall), and his own ethic was essentially that of Moore's *Principia Ethica*. Never has there been a more humane Utilitarian.

Keynes was born and bred a moral scientist in the Cambridge atmosphere. In Broad's British Academy biography of W. E. Johnson there is (p. 513) an extract from a letter of Keynes' describing how, as a child, he used to be in a fidget to get away while his father (J. N. Keynes) and Johnson argued endlessly at lunch over points in the former's *Formal Logic* (the fourth edition of which, published in 1906, contains an acknowledgement of J. M. Keynes's help). His work on Probability started as a Fellowship Dissertation: part of it was written in the India Office in those periods of leisure which, in spacious Edwardian times, even the most conscientious civil servant was able to secure. An early portrait of Keynes by Duncan Grant depicts him while writing it. His return to Cambridge as economics lecturer and the war of 1914-18 delayed publication, but Russell made use of it in writing his *Problems of Philosophy* (1912). When Keynes's *Treatise on Probability* appeard in 1921, it was enthusiastically received by philosophers, who found in it a serious attempt to answer Hume. I well remember the excitement with which I read it that Long Vacation, and my horror, on returning to Cambridge, at finding that F. P. Ramsey had not been

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convinced by every word of it! In reviewing the book in this JOURNAL (1922), Broad said that it was "the best work on Probability that [the philosophical public] are likely to see in this generation"; and Broad's prophecy has proved correct. As Keynes remarked, his was the first systematic English work on the logical foundations of Probability since Venn's *Logic of Chance* (1866); and in the last twenty-five years no book has appeared to rival Keynes's *Treatise* as that which serious students must first read. Time has disclosed various logical errors and hiatuses; and the principal thesis of the book—that probability is a logical relation between propositions comparable to entailment, so that an inductive conclusion is "probabilified" (to use Price's word) by its premisses in the same sort of way as that in which a deductive conclusion is entailed by its premisses—has been rejected by many of those philosophers who at first accepted it. But the fact remains that, had Keynes not written his book, philosophers would have thought about problematic reasoning and induction much less fruitfully than they have done. As was the case with Mill's *Logic*, the defects of Keynes's positive and definite doctrines have taught us more than the vaguenesses and hesitations of lesser men. Keynes claimed no finality for his work: he propounded it for "criticism and enlargement at the hand of others". Later he was to find Ramsey's pragmatic approach sympathetic, though he did not think it quite successful in dealing with "rational" belief. "It is not getting to the bottom of the principle of induction merely to say that it is a useful mental habit" (*Essays in Biography*, 1933, p. 301).

Keynes's multifarious activities prevented him from taking any public part in the Cambridge Moral Science Faculty. But, as an Elector, he took part in the elections of Broad and of Wittgenstein to the two Professorships; and the encouragement and help he gave to younger men—to Wittgenstein, Ramsey and myself among others—made us feel that philosophers were not isolated eccentrics but part of the living tradition of thought. Keynes's hobby was in collecting a library representative of this tradition: in doing this he discovered and republished (1938) an *Abstract of a Treatise of Human Nature* (1740), which he identified most ingeniously as having been written by Hume himself. Keynes touched no field of human activity which he did not adorn.

R. B. BRAITHWAITE.

PROFESSOR TAYLOR'S *A FURTHER WORD ON SPINOZA.*

To the Editor of MIND.

SIR,

I hope that a brief comment on the late Professor Taylor's posthumous reply to my references, in the series of articles on "Some Recent Criticisms of Spinoza", to his treatment of that philosopher, will not be resented by his friends as untimely. His four years' hesitation about publishing the article, "A Further Word on Spinoza", probably indicates his own dissatisfaction with it; and, indeed, I find no occasion in its pages for offering such amends to his memory as my sincere veneration for a man so wholly devoted to the things of the mind would prompt. Nevertheless, I should not wish to make *major veritas* (for I have occasionally enjoyed his friendly offices) a cover for *impietas*.

It is with some reluctance, therefore, that I say that I find much in his article that can only serve to underline my former strictures, by showing

how closely the faults of which I complained were bound up with his native temperament. Taylor's intellect was no *lumen siccum*, but was always strongly personal in its approach and attitude, so that there was an air of zealotry about even his well-founded judgements. I do not think that he was aware of the danger of this otherwise lovable characteristic—or of the blinding effect of its less admirable obverse.

This temperamental disposition is clearly apparent both in the passages of his posthumous article referring directly to my attitude and criticisms, and in the autobiographical reminiscences. Thus, he interpreted what I had to say about his *odium philosophicum* in relation to Spinoza as signifying simply that I imputed to him some " personal animosity " against Spinoza as a man. But that is not quite the point. Of course I realized that his animosity was originally directed against what he conceived to be the doctrine of Spinoza, and against the man only as its author. My complaint was that, having imputed a doctrine to Spinoza, or collected it more or less directly from commentators and common hearsay without adequate impartial regard for the plain evidence of Spinoza's own text, he thereupon transferred his animosity to a fictitious " Spinoza ", and named the false doctrine " Spinozism ". From justifiable dissent from a doctrine he thus passed to a fictitious personal animosity against a " man of straw ". And though this may have been qualified to some extent by admiration for other doctrines and attributes rightly or wrongly imputed to the philosopher, the more or less fictitious " Spinoza " remained for him a sort of stock " Aunt Sally ". Even " reverence for so much of his moral and religious teaching " was only made possible, he says, by recognition of Spinoza's " illogicality "—a strange ground or accompaniment for the judgement that he was " one of the greatest metaphysical thinkers of all time " :—a good man, a religious man, if you will, but in view of the nature of the inconsistencies imputed, hardly a great metaphysician !

I will not spend time with Taylor's good-natured, but rather confused, *tu quoque* (or *tu contra*) asserting my own supposed tendency to regard the doctrine of Spinoza as " inspired revelation ", and so forth, with its inconsistent undercurrent of doubt about my sincerity (for I suppose that is the suggestion of the reference to Serjeant Buzfuz), for it can have been no part of Taylor's case. But I hope that there is no real ground for either suggestion. The most that I have ever claimed in this direction is that Spinoza was not likely to have overlooked, or, having noted, ignored, inconsistencies that could not escape the notice of any tiro (*e.g.* that morality can have any place in a mechanistic universe, or that abstract concepts can be argued into real existence). It is true that I have also recommended *amor philosophicus* as a *methodological* aid for understanding a philosopher belonging to a different intellectual climate, and have said that understanding is seriously handicapped by *odium philosophicum;* and this was, perhaps, a hard saying to one of Taylor's temperament. In my view idolatry and iconoclasm (being the effect of divergent idolatry) are equally foreign to the true philosophic spirit.

But it is in the autobiographical passages of his article that Taylor's temperamental idiosyncracy is most engagingly apparent. In a very young man the conflict of intellect and personal devotion is very excusable, but I suggest that there is more than a hint of the mature Taylor in his memory of his early years when Spinoza was " one object of youthful adoration " in spite of the fact that " the epistemology of the *Second Part* " of the *Ethics* was " a dark place ". For what was this but " idolatry " ?

The very confident assertions about Spinoza's theory of knowledge in Taylor's later, and latest, writings indicate, presumably, that he conceived that this darkness had, in course of time, been dispelled—with the result that the epistemology was rejected, and the whole metaphysical theory brought under condemnation. If so, I fear that it must be said that the light thus shed was only darkness; and how great was the darkness is sufficiently shown by the two assumptions that he imputes to Spinoza as constituting "the heart of all my dissatisfaction with the general principles of Spinozism".

The first of these assumptions is that "*every true proposition is one which asserts or denies a predicate of a subject*"; and this is said to be clearly apparent in Spinoza's definitions of *substance*, *attribute*, and *mode* (with the tacit implication that the system requires no fourth ultimate). Unless I have gravely misunderstood Taylor's point, this is pure self-delusion arising from the substitution for Substance *as defined*, substance in "the traditional Aristotelian sense", with the implication that whatever is not substance (*i.e.* the Attributes and Modes) is a "predicate" of substance. Now, however hard the word may be, this is what I call being "obtuse"; for what is clear beyond all dubiety to one who will attend to the text and remove his Aristotelian spectacles, is that neither the Attributes nor the Modes are conceived by Spinoza himself as "predicates" of Substance: both are expressions or actualizations of its essential potency—the Modes as determinations, finite or infinite, of its original indeterminate omnifecundity; the Attributes as "that which the (modal) intellect perceives" reflectively of that original potency in its act of modal self-expression or actualization. Thus it is unnecessary for me to consider the argumentation about the place and reality of "relations"—indeed it is beside the point, since all the textually grounded contentions educed by Taylor concern, not Spinoza, but his "younger contemporary, Leibniz". If it "should be clear . . . that in principle Spinoza is open to the same criticism" it is a little difficult to see why it was necessary to have resort to Leibniz for evidence. But apart from this flagrant *petitio principii* I can discover in the article no grounds for the imputation but the confusion that I have named, and which seems to me only the result of a sort of chronic intellectual jaundice in the critic, who thus sees everything as "Aristotelian".

The second fatal assumption imputed by Taylor to Spinoza is "that a metaphysical system ought to be or can be demonstrated *more mathematico*", so that "the *Ethics* is a prolonged effort to deduce truths of existential import out of a combination of definitions", axioms, and postulates—"definitions" being understood as mere conceptual formulas or "ideal contents". This is a mere travesty which I have sought to expose in relation to Joachim's equivalent strictures—a process which I will not occupy space in repeating. If one begins by assuming that Spinoza was an Aristotelian, almost any futility may be ascribed to him. Did these eminent writers suppose, then, that when the geometer deduces the properties of the triangle from the definition, axioms, and postulates (or however it is best to express the process), the embedded triangle is at his mercy, and does not itself dictate what the geometer infers? How thus could the process be *inferential*? Plainly then, there is here something more than "floating ideal contents" at work, and the business of the metaphysician is to discover what, and to seek to generalize and de-relativize the process and its result. It was nothing less than this that Spinoza attempted.

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Finally, I must say something about Taylor's treatment of the examples of tendentious mistranslation which, in view of the seriousness of my complaint as directed against a philosopher of his high reputation and acknowledged scholarship and acumen, I was careful to give in my articles. I must, of course, accept his denial that in adding the word "antecedent" to one quotation he *meant* to suggest "temporal order", though that the suggestion is there I must insist. But when he says that "Spinoza himself says . . . in so many words" that the *facies totius universi* is "*perpetually changing*", going so far as to quote the Latin, I can only protest that I see no reason other than Taylor's resolute and unrepentent bias, for substituting the secondary "figurative" meaning of *variare* when the plain sense of the phrase is "diversified in infinite modes". I will add that all ambiguity in this matter is removed by the statement of *Ethices II, Lem. vii Sch.*: "Facile concipiemus totam naturam unum esse Individuum cujus partes, hoc est, omnia corpora infinitis modis variant, *absque ulla totius Individui mutatione*".

Yours, *etc.*
H. F. HALLETT.

King's College London,
13th April, 1946.

BRITISH INSTITUTE OF PHILOSOPHY.

To the Editor, MIND.

SIR,

On the 6th of April of this year the British Institute of Philosophy came of age. Founded under the late Lord Balfour, its Council has been throughout composed of leading representatives, not only of philosophy, but also of science, of politics, and of industry and commerce. For twenty-one years the Institute has been active in promoting the purposes for which it was founded—to serve as a link between philosophers and the everyday world, and to spread such general understanding as can be reached of the universe in which we live and of man's place in it. There have been continuous courses of lectures for students on the various branches of philosophy and popular addresses on fundamental issues, drawing large audiences and evoking discussion. Local branches have been formed in several cities. *Philosophy*, the quarterly journal of the Institute, contains articles by writers of distinction on the great philosophical questions, as well as reviews by specialists of the important new books on such subjects, published in this or other countries. The journal enjoys a considerable circulation outside the membership and beyond our own shores.

Throughout the war years the work of the Institute was continued to the extent that the difficult conditions allowed, although it suffered the same shrinkage of membership as other such societies. The numbers still exceed a thousand; but that is far too few to enable the Institute to fulfil adequately the objects it exists to promote. The annual subscription is only one guinea, which includes receipt of the Journal, and there is no entrance fee. The income so derived is plainly insufficient; but the Council are reluctant to raise the terms of membership for fear of causing a further contraction. The right remedy is the opposite—a large increase in the number of members. It is in order to appeal to those interested to join the Institute that this letter is written.

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There must be great numbers of men and women, in all walks of life, who recognise that our age is a time of intellectual and moral confusion, and that this is the root cause of its troubles and disasters. Some may take refuge in a passive and futile pessimism; others may be tempted to plunge into some desperate kind of revolutionary action, more likely to make things still worse. To build up a body of positive, instead of merely critical, thought, as a basis for well-considered constructive action in the spheres of morals, of politics and of economics is the only right course. In this a leading part should be played by British philosophy, which has won much distinction in the past, and may render still greater service in the future, in formulating thought and linking it with action. But an organization is needed to furnish a platform for discussion and to disseminate ideas. The British Institute of Philosophy is such an organization. What is now necessary is a reinforcement of its numbers as a means to reinvigorating its action.

Yours faithfully,
SAMUEL (*President*).
W. D. ROSS (*Chairman*).
LINDSAY OF BIRKER (*Deputy Chairman*).

Application for further information and forms of membership should be made to
The Director of Studies,
The British Institute of Philosophy,
University Hall,
14 Gordon Square,
London, W.C.1.

MIND ASSOCIATION: ANNUAL MEETING.

The Annual Meeting of the Association will be held this year at Dalton Hall, Manchester, on 5th July at 5 p.m.

It will be followed by a Joint Session with the Aristotelian Society.

MIND ASSOCIATION.

Those who wish to join the Association should communicate with the Hon. Secretary, Mrs. KNEALE, Lady Margaret Hall, Oxford; or with the Hon. Treasurer, Mr. H. STURT, 55, Park Town, Oxford, to whom the yearly subscription of sixteen shillings should be paid. Cheques should be made payable to the Mind Association, Westminster Bank, Oxford. Members may pay a Life Composition of £16 instead of the annual subscription.

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Members are reminded that subscriptions should be sent to the present Treasurer, Mr. Sturt, and *not* to Mr. McKie.